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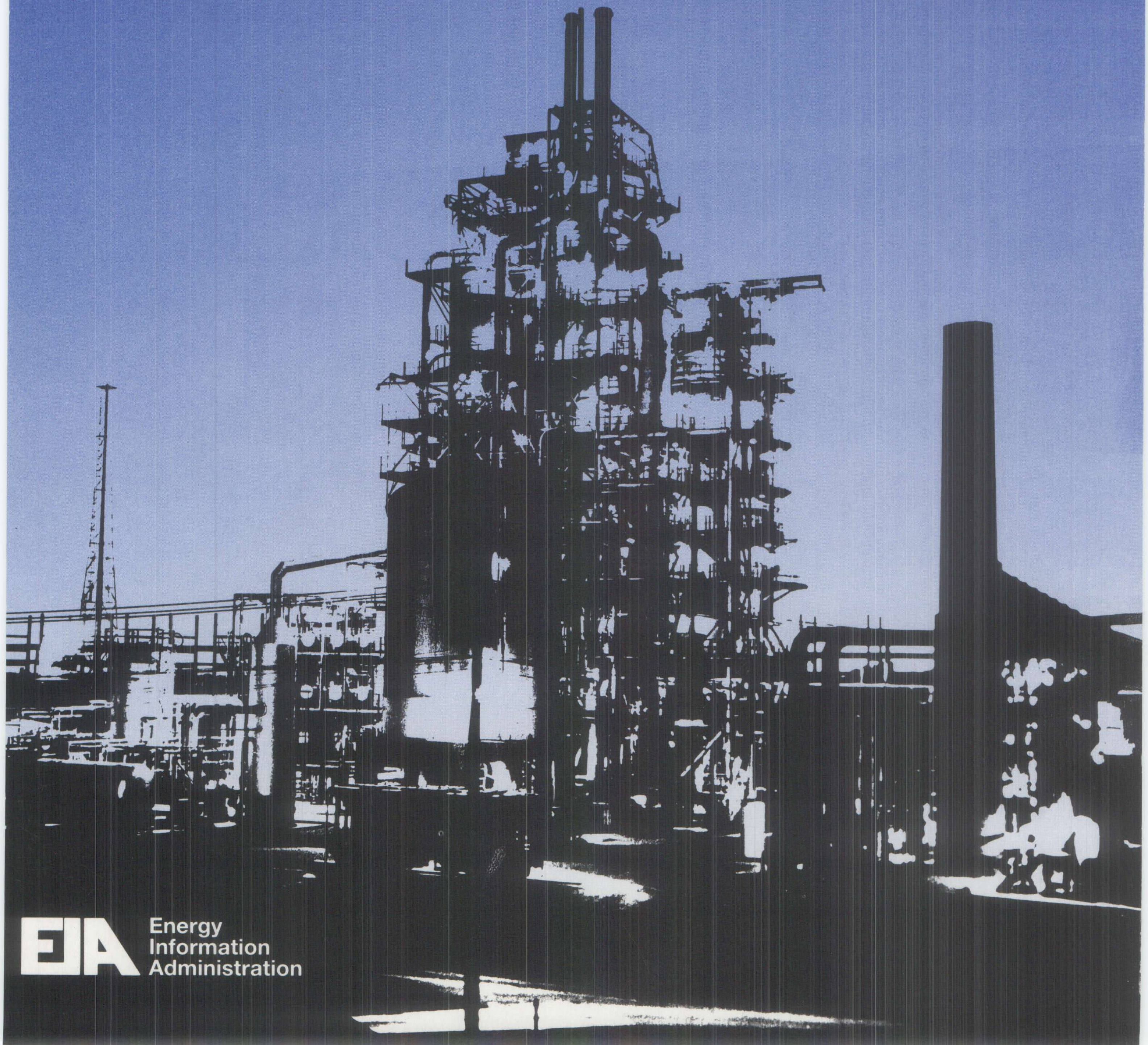
Profiles of Foreign Direct Investment in U.S. Energy 1990



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Profiles of Foreign Direct Investment in U.S. Energy 1990

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Preface

In accordance with Section 657, Subpart 8, of the U.S. Department of Energy Organization Act, the Energy Information Administration (EIA) prepares an annual report for the Secretary of Energy and for transmittal to Congress. This report summarizes the activities in the United States by foreign-affiliated companies that own or control U.S. energy sources and supplies.

The following profiles for 1990 are presented:

- Foreign direct investment in U.S. petroleum, including natural gas, and coal mining.
- Energy production, processing, distribution, and reserves of foreign-affiliated companies.
- Financial performance and investment activity of foreign-affiliated energy companies.
- Overseas petroleum operations of U.S. companies.
- Comparisons of foreign-affiliated companies with U.S. energy companies.

The information contained in this report is intended for use by the Congress, government agencies, energy industry analysts, international trade and finance analysts, and the general public.

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Executive Summary

Foreign companies, through their U.S.-based affiliates, play a significant role in U.S. energy production and processing. For example, in 1990, foreign-affiliated companies accounted for 16 percent of U.S. oil production, 25 percent of U.S. coal production, and 28 percent of U.S. refining capacity. The investment patterns of foreign-affiliated energy companies thus provide important indicators of targets of opportunity in U.S. energy. Also, the roles of foreign-affiliated companies continue to raise a variety of concerns about the extent and composition of foreign ownership of the United States' energy production capabilities.

Profiles of Foreign Direct Investment in U.S. Energy 1990 describes the role of foreign ownership in U.S. energy enterprises, with respect to investment, energy operations, and financial performance. Additionally, since energy investments are made in a global context, outward investment in energy is reviewed through an examination of U.S.-based companies' patterns of investment in foreign petroleum. The data used in this report come from the Energy Information Administration (EIA), the U.S. Department of Commerce, company annual reports, and public disclosures of investment transactions.

Of the approximately 80 companies profiled, the major foreign-affiliated U.S. petroleum companies identified by the EIA are Shell Oil Company, BP America, E.I. du Pont de Nemours and Company, and American Petrofina. Foreign ownership ranges from 23 percent of Du Pont to 100 percent of Shell Oil and BP America. Foreign-affiliated companies' 50-50 refining joint ventures with major U.S. petroleum companies include Star Enterprise (Texaco and Saudi Arabia's Aramco) and Uno-Ven (Unocal and Petroleos de Venezuela). In U.S. coal operations, the two largest producers in 1990, Peabody Holding Company and Consolidation Coal Company, were both foreign affiliated.

Foreign affiliation does not necessarily imply foreign control. As little as 10-percent ownership of a company's voting securities (or the equivalent) by a single foreign investor can constitute foreign affiliation. The determination of control is a complex and often subjective process in which many factors other than the percentage of ownership must be considered.

Highlights of this report are given below.

Foreign Direct Investment

As measured by investment flows, foreign investor interest in U.S. energy and U.S. industry overall declined in 1990. For all enterprises in the United States (energy and non-energy), additions to the foreign direct investment position (FDI)[1] fell from $59.0 billion in 1989 to $30.0 billion in 1990, the lowest level since 1985. Factors that contributed to the decline in additions to overall FDI in the United States included reduced cash flow, expanded investment opportunities in other nations stemming from further economic integration of the European Communities, repayment of merger-related debt to foreign owners, and geographic interest rate differentials that favored an outflow of funds to foreign owners.

In U.S. petroleum, additions to FDI remained at a low level in 1990 compared with most of the decade. Additions totaled $0.8 billion in 1990, down from $1.2 billion in 1989. The petroleum share of total FDI was 9 percent in 1990, the lowest share since at least 1974.[2] Despite higher oil prices in 1990 (up $4 per barrel compared with 1989) and increased income from petroleum operations, the market for U.S. petroleum assets remained relatively quiet.

[1]The foreign direct investment position (FDI) is the cumulative net flow of funds between a foreign-affiliated company and its foreign owners. The U.S. Department of Commerce, the agency that collects data on FDI, measures FDI as the book value of foreign direct investors' equity in and net outstanding loans to their U.S. affiliates. The Department of Commerce defines a U.S. affiliate as a U.S. business enterprise in which one foreign direct investor owns 10 percent or more of the voting securities or the equivalent.

[2]Enterprises classified as petroleum operations (including natural gas) and coal mining account for 95 percent of all energy-related FDI in the United States, which amounted to $45.8 billion in 1990. The U.S. Department of Commerce classifies uranium mining in the "other metallic ores" industry. The value of FDI in the industry classification, "electric, gas, and sanitary services," which includes gas and electric utilities, amounted to 5 percent of FDI in U.S. energy.

Foreign Involvement in Mergers and Acquisitions

For the third consecutive year, the largest FDI-related transaction in U.S. petroleum involved the acquisition of refining and marketing interests by a state energy affiliate of an Organization of Petroleum Exporting Countries (OPEC) member. Petroleos de Venezuela (PDVSA), the state-owned energy company of Venezuela, paid $675 million in 1990 to acquire the remaining 50-percent interest in Citgo Petroleum it did not already own. Prior transactions by PDVSA and Saudi Arabia's Aramco increased their affiliates' share of U.S. refinery capacity from zero to 8 percent between 1986 and 1990. These transactions largely accounted for the rise in OPEC nations' share of petroleum-related FDI from a fraction of a percent to 11 percent over the same period. No other FDI-related transactions directed at U.S. refining and marketing operations in 1990 exceeded $100 million in value.

Compared with most years of the past decade, overall merger and acquisition activity in U.S. oil and gas production was at a low level for the second consecutive year in 1990. Only four FDI-related transactions involving U.S. upstream assets in 1990 exceeded $100 million in value:

- Bermuda-based Arethusa (Offshore) Ltd. bought Zapata Corporation's 12-rig offshore drilling fleet and related assets for $298 million.

- Mosvold Shipping A.S., a Norwegian company, purchased Dual Drilling Company, a subsidiary of Bechtel Group, for $170 million.

- Bridge Oil (USA) Inc., a subsidiary of Australia's Bridge Oil Ltd., acquired the south Texas and Gulf of Mexico oil and gas properties of Texas Oil and Gas Corporation, a subsidiary of USX Corporation, for $159.3 million.

- Norcen Energy Resources Ltd., of Canada, acquired U.S.-based Skelgas Group Inc., a propane marketer, for $156.7 million.

Also, offerings of Federal Outer Continental Shelf acreage in 1990 were at their lowest level since 1983.

The largest FDI-related transaction in U.S. energy in 1990 was in coal production. The British conglomerate Hanson PLC acquired Peabody Holding Company, the leading producer of U.S. coal, for $1,223 million. The other sizable coal transaction in 1990 involved two foreign-affiliated companies: Ashland Coal Company, partially owned by Germany's Saarberg Coal AG and Carboex International Ltd. of Spain, paid $144 million for the assets and operations of BP America's Mingo Logan Coal Company.

U.S. Energy Operations

The largest change in the role of foreign affiliates occurred in the coal industry. Due to the acquisition of Peabody, the foreign affiliates' 1990 U.S. coal production was 23 percent above their 1989 production which led to an increase in their share of U.S. coal production from 21 percent in 1989 to 25 percent in 1990 (Figure ES1).

Foreign affiliates' share of U.S. downstream petroleum operations continued to rise in 1990. Acquisition of a 50-percent interest in Seaview Oil Company by PDVSA's Citgo Petroleum and Castle Energy's reactivation of a previously acquired refinery raised the foreign affiliates' share of U.S. refining capacity by nearly a percentage point, to 28 percent. Also, the gasoline sales of foreign-affiliated companies accounted for nearly 32 percent of the U.S. total in 1990, up from 28 percent in 1989.

The reduced level of upstream merger and acquisition activity in 1990 had little effect on foreign affiliates' shares of U.S. oil and gas production, which were slightly over 16 percent and 8 percent, respectively, in 1990. Similarly, the foreign affiliates' share of U.S. oil reserves, at 19 percent in 1990, was down a fraction of a percent from 1989 while their share of U.S. natural gas reserves increased by a fraction of a percent, to 10 percent.

Financial Performance

Largely due to the increase in oil prices following Iraq's invasion of Kuwait, overall income of U.S. energy companies increased between 1989 and 1990. However, foreign-affiliated energy companies' net income declined by 10 percent, while other energy companies posted a 13-percent increase. The decline in foreign affiliates' net income was traceable to asset writedowns and lower chemical earnings for Du Pont, Panhandle Eastern, and Shell Oil. Apart from these companies, foreign affiliates' net income rose by more than 20 percent between 1989 and 1990.

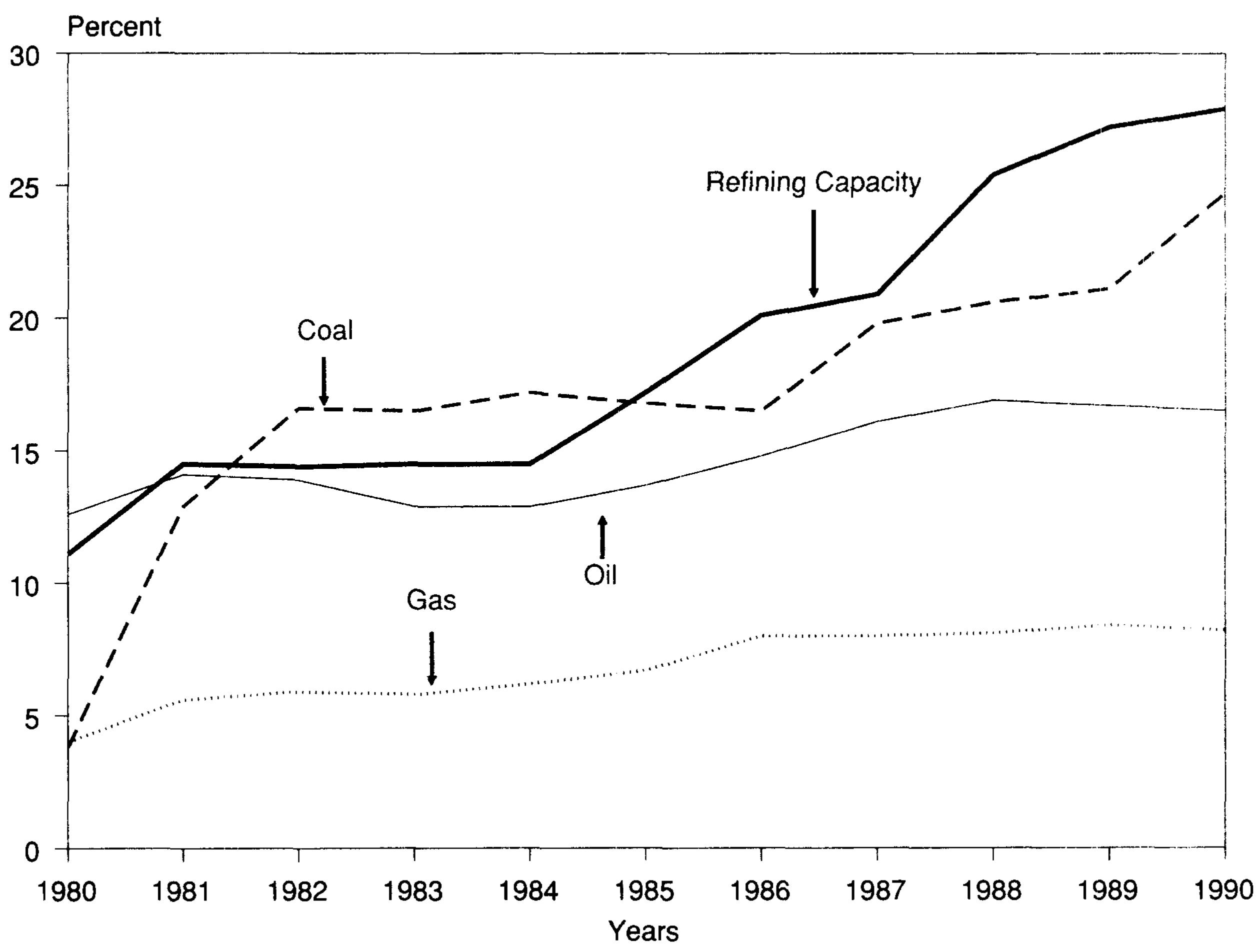
Direct Investment Abroad

For the first time since 1982, additions to petroleum-related direct investment abroad by U.S. companies exceeded additions to FDI in U.S. petroleum. This increase was due to an absence of large divestitures of foreign petroleum assets in 1990 and a large increase in retained earnings abroad stemming from higher oil prices. Also, the *level* of petroleum-related direct investment abroad remained above the level of petroleum-related FDI in 1990.

U.S.-based major petroleum companies continued to show a strong interest in foreign oil and gas development. Based on information contained in EIA's *Performance Profiles of Major Energy Producers 1990,* the share of the majors' exploration and development expenditures allocated to foreign locales remained near 50 percent in 1990, considerably above the 27-percent share of the mid-1980's.

On the downstream side, U.S.-based major petroleum companies continued to reduce the extent of their foreign refining operations. The majors' share of foreign refining capacity declined from 11 percent in 1989 to 10 percent in 1990. However, their remaining foreign refining operations were targets of investment. Capital expenditures for these operations (excluding mergers and acquisitions) more than doubled between 1989 and 1990.

Figure ES1. Foreign Affiliates' Share of U.S. Production of Oil, Gas, and Coal, and U.S. Refining Capacity, 1980-1990



Sources: Tables 7, 9, and 12 of Chapter 3 of this report. U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(84) (Washington, DC, September 1984). Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy,* 1983, 1984, 1985, 1986, 1987, 1988, and 1989, DOE/EIA-0466 (Washington, DC, 1984-1990).

1. Introduction

According to a Congressional report on foreign investment:[1]

> "The Congress and the Public have expressed serious concerns about the impact and effects of foreign investment in the United States. They are concerned about the possibility that, if the assets or the natural resources of large U.S. firms end up under foreign control, those firms could be operated in ways ultimately harmful to U.S. national interests. These concerns arise out of the reports of foreign takeovers of high technology U.S. firms, acquisitions of U.S. farmland, investment in U.S. banks and government securities, and large foreign purchases of U.S. energy and other natural resources with the concomitant export of these scarce resources. Some of these concerns may be unfounded, but it is self-evident that both the Congress and the public must be fully apprised of the impact and effects of foreign investment to make these judgments."

The above concerns extend specifically to involvement of foreign interests in U.S. energy as evidenced by Section 657, Subpart 8, of the U.S. Department of Energy Organization Act (Public Law 95-91). This act requires that the Secretary of Energy report to the President for transmittal to Congress:

> ". . . to the extent practicable, a summary of activities in the United States by companies or persons which are foreign owned or controlled and which own or control United States energy sources and supplies, including the magnitude of annual foreign direct investment in the energy sector in the United States . . . ."

The Energy Information Administration (EIA) annually prepares a report, pursuant to this legislative requirement.[2] Versions of the report, for years prior to the 1983 reporting year, appeared as Appendix A in the U.S. Department of Energy's *Secretary's Annual Report to Congress*. Beginning with the 1983 reporting year, the annual report on foreign investment and ownership in U.S. energy has been published by the EIA.

This report reviews the patterns of foreign ownership interest in U.S. energy enterprises, exclusive of portfolio investment.[3] Throughout this report such foreign non-portfolio ownership interests in U.S. energy companies are referred to as "foreign direct investment" and the U.S. affiliates in which a foreign entity holds an ownership interest are referred to as "foreign-affiliated" U.S. enterprises or companies.

By definition, "a U.S. affiliate is a U.S. business enterprise in which a single foreign direct investor owns at least 10 percent of the voting securities, or the equivalent."[4] It should be noted that holding 10 percent or more of a company's voting stock does not necessarily constitute control of that company. The determination of control is a complex and often subjective process in which many factors other than the percentage of ownership must be considered.

This report profiles the involvement of foreign-affiliated U.S. companies in the following areas: domestic petroleum production (including natural gas), reserve holdings, refining and marketing activities, coal production, and uranium exploration and development. A financial profile of U.S. energy companies that are foreign-affiliated is presented, comparing data for 1989 and 1990. For the petroleum industry, the report identifies the international composition of ownership, as well as information on the flow of capital and income between foreign owners and the foreign-affiliated companies. In addition, a summary of recent acquisitions of ownership interests in U.S. energy companies by foreign investors is presented.

[1]U.S. House of Representatives, Committee on Government Operations. *The Adequacy of the Federal Response to Foreign Investment in the United States* (August 1980), p. 2.

[2]A report on exports of energy, required by the same legislation, is in the U.S. Department of Energy, *The Secretary's Annual Report to Congress*, DOE/S-0010(90) (Washington, DC, June 1991).

[3]Foreign ownership of less than 10 percent of a U.S. enterprise is classified as portfolio investment by the U.S. Department of Commerce.

[4]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, June 1991), p. 31. Also, it should be noted that, consistent with its definition, foreign investment activities portrayed throughout this report do *not* include any foreign investment activities in connection with less than 10 percent ownership, which is known as portfolio investment.

The information on the foreign direct investment position (FDI) in the United States is derived from data published by the U.S. Department of Commerce. The data are obtained from quarterly reports required of foreign-affiliated U.S. enterprises. FDI is the cumulative net flow of funds between a foreign-affiliated company and its foreign owners. These capital flows consist of stock purchases and paid-in capital, retained earnings and other equity, and loans from and to foreign parents.[5] The change in FDI is neither a direct measure of capital expenditures in the United States by foreign-affiliated U.S. companies nor the total value of acquisitions of ownership interests by foreign investors. Foreign direct investment is a measure of the net flow of capital between the foreign entities and their U.S. affiliates. It should be emphasized that investment flows out of, as well as into, the United States. As is reported in the next chapter, U.S. direct investment in petroleum abroad exceeds petroleum FDI in the United States, although this difference has narrowed in recent years.

Recent Developments in Overall Foreign Direct Investment in the United States

Overall additions to FDI in the United States (which includes both energy and nonenergy industries) fell from $59.0 billion in 1989 to $30.0 billion in 1990. In 1990, additions to FDI were at their lowest level since 1985. One way of viewing this development is at the industry level. Most of 1990's decline in FDI was due to diminished additions for manufacturing investments in the United States. Additions to manufacturing FDI fell $21.1 billion between 1989 and 1990. Another segment contributing sizably to the decline was the financial industries outside of banking. Additions to this segment fell $12.5 billion in 1990.[6]

At the country level, the United Kingdom, the largest foreign direct investor in the United States, registered a $7.3 billion decline in their additions to U.S. FDI in 1990. This was followed by Switzerland, whose additions fell $5.5 billion and Germany, whose additions declined $5.0 billion. Japanese additions to U.S. direct investment, at $16.2 billion, were unchanged from 1989. This made the Japanese responsible for 54.0 percent of additions to FDI in 1990, compared with their 27.4-percent share in 1989.

The U.S Department of Commerce cited several factors that contributed to the decline in additions to overall FDI in the United States:[7]

- A weaker U.S. economy generated less cash flow from operations, thereby reducing the level of reinvestable earnings.
- Funds from abroad were reduced by slower economic growth and recession in some industrialized countries and by the tighter monetary policies of a number of major central banks.
- Increased economic integration in the European Communities and German reunification provided additional opportunities for investment in Europe.
- Interest rate differentials between the United States and abroad made borrowing in the United States through affiliates in order to finance foreign operations a more attractive option for foreign owners. This development encouraged an outflow of funds between foreign-affiliated U.S. companies and their foreign owners.
- Several affiliates, who in recent years borrowed from their foreign parents in order to make acquisitions in the United States, repaid sizable amounts of debt to their foreign owners.

As shown in the next chapter, the petroleum share of additions to FDI was 9 percent in 1990, the lowest share since at least 1974. Petroleum operations include exploration and production, refining, transportation, and marketing of crude oil and natural gas. These operations, plus coal mining, accounted for 95 percent of energy-related FDI in the United States, which amounted to $45.8 billion in 1990.[8]

[5]One component of FDI consists of equity and intercompany account capital flows between a foreign investor and its U.S. affiliate measured on a net basis. Since this component is measured on a net basis, it can have a negative value. A detailed discussion of FDI data collection and methodology is contained in "A Guide to BEA Statistics on Foreign Direct Investment in the United States," U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, February 1990).

[6]Data in this paragraph and the next paragraph were obtained from U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), pp. 47, 77-78.

[7]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, June 1991), p. 31.

[8]Based on data in U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), pp. 77-78. The U.S. Department of Commerce classifies uranium mining in the "other metallic ores" industry. The value of FDI in the industry, "electric, gas, and sanitary services," which includes gas and electric utilities, amounted to 5 percent of FDI in U.S. energy.

2. Foreign Direct Investment in U.S. Petroleum and Coal

The data in this chapter have been published by the U.S. Department of Commerce. For U.S. Department of Commerce reporting purposes, the petroleum industry consists of crude oil production (including natural gas liquids), natural gas production, oil field services, integrated refining, marketing, and petroleum transport. Due to the prominence of the major petroleum companies, foreign-affiliated companies classified in integrated petroleum refining accounted for 69 percent of the FDI in U.S. petroleum in 1990.[9] The major foreign-affiliated U.S. petroleum companies identified by the Energy Information Administration (EIA) are Shell Oil Company, BP America, E.I. Du Pont de Nemours and Company, and American Petrofina. Foreign ownership ranges from 23 percent of Du Pont to 100 percent ownership of BP America and Shell Oil.[10] Major petroleum companies' 50-50 refining joint ventures with foreign partners include Star Enterprise (Texaco and Saudi Arabia's Aramco) and Uno-Ven (Unocal and Petroleos de Venezuela).

Foreign Direct Investment and Rates of Return in U.S. Petroleum

Oil prices rose sharply after Iraq's invasion of Kuwait in August 1990. On an annual basis, the U.S. wellhead price of crude oil in 1990 was over $4 per barrel higher than in 1989.[11] Higher oil prices resulted in a 6-percent[12] rise in U.S. drilling activity and a 4-percent increase in U.S. petroleum exploration and development expenditures.[13] However, the market for petroleum and natural gas assets remained relatively quiet in 1990. The level of U.S. oil and gas reserves purchased during 1990 was the second lowest in the 1986 through 1990 period.[14] Also, the amount of Federal Outer Continental Shelf (OCS) acreage offered for bid in 1990 was the smallest amount since the U.S Department of Interior's area-wide leasing policy went into effect in 1983.[15] On the downstream side of the petroleum industry (refining, marketing, and transport), there were few sizable transactions involving U.S. operations in 1990. The only U.S. downstream petroleum transaction in excess of $50 million was effected by a foreign-affiliated company.[16]

FDI in U.S. petroleum was $38.0 billion in 1990 (Table 1), and equalled 9.4 percent of total FDI in the United States, which was the smallest share for petroleum since at least 1974. Further, additions to FDI in U.S. petroleum, at $0.8 billion in 1990, remained at a low level (Figure 1).

The low level of additions to FDI in U.S. petroleum also reflected factors, reviewed in Chapter 1, that led to a sharp decline in overall additions to FDI. For the third consecutive year, the largest FDI-related petroleum industry transaction involved acquisition of U.S. refining and marketing operations by OPEC interests. Petroleos de Venezuela SA (PDVSA), the state-owned energy company of Venezuela, purchased the remaining 50 percent of Citgo Petroleum, which it did not own, for $675 million (see Box on page 6). In 1986, PDVSA acquired 50 percent of Citgo Petroleum from Southland Corporation. Citgo owns a refinery in Lake Charles, Louisiana (with crude oil distillation capacity of 305 thousand barrels per day [bd]) and supplied over 9,000 retail gasoline outlets in 1990.[17] The 1986 transaction was the first in a series of U.S. downstream petroleum acquisitions made by the national oil companies of OPEC members, Venezuela and Saudi Arabia. PDVSA subsequently gained ownership of Champlin Petroleum and then entered into the Uno-

[9]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), p. 77.

[10]Foreign ownership shares in excess of 5 percent are reported in company filings of Securities and Exchange Commission Form 13-D.

[11]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 9.1.

[12]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 5.2.

[13]American Petroleum Institute, *1990 Survey on Oil & Gas Expenditures* (Washington, DC, November 1991), p. 1.

[14]Arthur Andersen & Co., *Oil & Gas Reserve Disclosures* (Chicago, 1991).

[15]Minerals Management Service, *Federal Offshore Statistics: 1990*, MMS 91-0068 (Herndon, VA, 1991), Table 3.

[16]Based on a review of nearly 900 transactions listed in the *Oil & Gas Investor*, September 1990 and April 1991.

[17]Chapter 3 of this report contains a discussion of foreign affiliates' U.S. refining and marketing operations.

Table 1. Foreign Direct Investment in U.S. Petroleum and U.S. Direct Investment in Foreign Petroleum, 1980-1990

Year	Foreign Direct Investment in U.S. Petroleum[a,b,d]	Total Foreign Direct Investment in U.S.[b,d]	Petroleum as a Percent of Total	U.S. Direct Investment in Foreign Petroleum[a,c,d]	Total U.S. Direct Investment Abroad[c,d]	Petroleum as a Percent of Total
	(billion dollars)			(billion dollars)		
1980	12.2	83.0	14.7	47.6	215.4	22.1
1981	15.2	108.7	14.0	53.2	228.3	23.3
1982	17.7	124.7	14.2	57.8	207.8	27.8
1983	18.2	137.1	13.3	57.6	207.2	27.8
1984	25.4	164.6	15.4	58.1	211.5	27.5
1985	28.3	184.6	15.3	57.7	230.2	25.1
1986	29.1	220.4	13.2	58.5	259.8	22.5
1987	37.8	263.4	14.4	59.8	314.3	19.0
1988	36.0	314.8	11.4	57.8	335.9	17.2
1989	37.2	373.8	10.0	54.0	370.1	14.6
1990	38.0	403.7	9.4	59.7	421.5	14.2

[a]The petroleum industry includes all phases of petroleum exploration, production, refining, transport, and marketing.
[b]Foreign direct investment (FDI) is the value of foreign parents' net equity in, and outstanding loans to, affiliates in the United States at the end of the year.
[c]This is the value of U.S. parents' net equity in, and loans to, affiliates outside of the United States.
[d]Data for 1987, 1988, and 1989 were revised by the U.S. Department of Commerce.
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991).

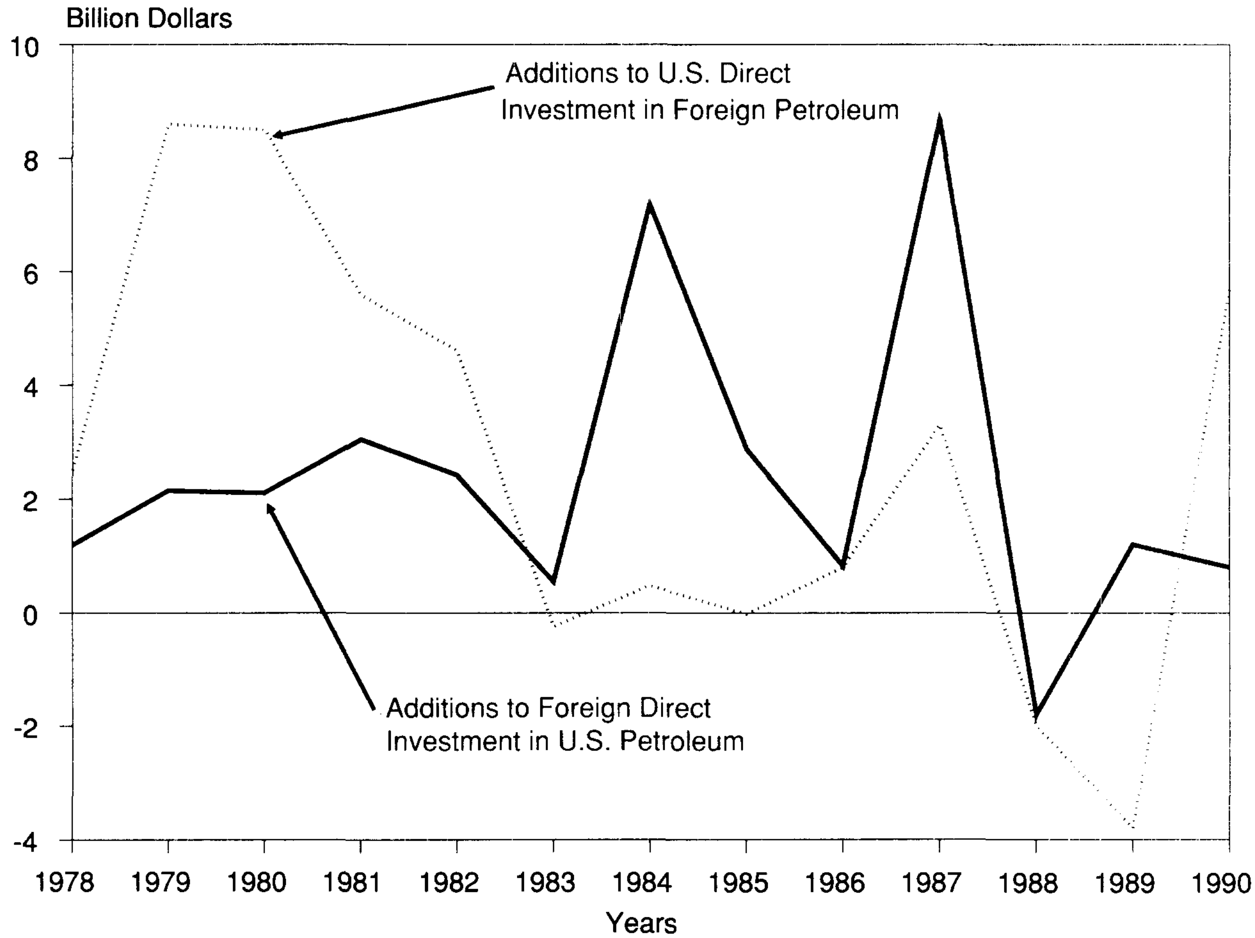
Ven joint venture with Unocal. Meanwhile, Saudi Arabia's Aramco formed the Star Enterprise joint venture with Texaco. As discussed in the next chapter, affiliates of Saudi Arabia and Venezuela accounted for 8 percent of U.S. refining capacity in 1990. The motives for these transactions appear to be assurance of access to downstream processing and distribution channels[18] and entry into the large U.S. refined product market which has returned to near-normal levels of profitability in recent years.[19]

The two other large 1990 transactions related to U.S. downstream petroleum operations also involved Aramco and its Star Enterprise joint venture with Texaco. Star Enterprise purchased 128 convenience stores in Florida for $83 million, while its 50-percent owner, Aramco, contributed $50 million toward the upgrading of Star Enterprise's Port Arthur, Texas refinery.

The level of upstream-related FDI activity continued at a reduced level in 1990. In both 1989 and 1990, only four FDI transactions involving U.S. oil and gas assets exceeded $50 million in value. In 1987 and 1988, the comparable numbers of transactions were nine and thirteen, respectively. The two largest transactions related to U.S. oil and gas production in 1990 were directed at drilling and oil field service assets. Arethusa (Offshore) Ltd., based in Bermuda, paid $298 million for Zapata Corporation's offshore drilling fleet and Mosvold Shipping, a Norwegian company, purchased a controlling interest in Bechtel Corporation's Dual Drilling Company for $170 million. Two other oil and gas transactions in 1990 exceeded $100 million in value. Bridge Oil (USA) Inc. purchased a package of oil and gas properties offered by USX Corp.'s Texas Oil and Gas subsidiary for $159 million. (Bridge Oil [USA] is a subsidiary of the Australian company, Bridge Oil Ltd.) Norcen Energy Resources, a Canadian-based company,

[18]See, for example, Petroleos de Venezuela SA, *Annual Report 1989*, pp. 6, 26, 42, and 46; *Saudi Aramco 1989*, p. 22; and Texaco Inc., *1988 Annual Report*, p. 11.
[19]See Energy Information Administration, *U.S. Energy Industry Financial Developments 1990 Fourth Quarter*, DOE/EIA-0543(90/4Q) (Washington, DC, March 1991), Figure 3.

Figure 1. Additions to Foreign Direct Investment in U.S. Petroleum and U.S. Direct Investment in Foreign Petroleum, 1978-1990



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1985, August 1988, and August 1991).

through its Superior Propane subsidiary, acquired Skelgas Group Inc. for $157 million. Skelgas markets propane in 11 midwestern states.

Higher oil prices led to large gains in income from oil and gas production. FDI-related petroleum income increased from $2.2 billion in 1989 to $3.2 billion in 1990, [20] pushing the rate of return on FDI in petroleum to its highest level since 1984 (Figure 2).[21]

Investment in petroleum flows from as well as into the United States. Although additions to direct investment in foreign petroleum by U.S.-companies made a positive turnaround of $9.5 billion between 1989 and

[20]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), p. 49.

[21]The rate of return is defined as the foreign investor's income from foreign-affiliated U.S. companies divided by the average of the beginning-of-year and end-of-year balances of the parents' FDI position. According to the U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, February 1990), p. 30, "*Direct investment income* consists of (1) the foreign parents' shares of the U.S. affiliates' earnings (net of U.S. withholding taxes on distributed earnings) and (2) interest on intercompany debt of the U.S. affiliates with their foreign parent groups. Earnings is defined as the foreign parent's share in the net income of the U.S. affiliate, after provision for U.S. income taxes. Interest is defined as interest paid by the U.S. affiliate to the foreign parent group, net of interest received by the U.S. affiliate from the foreign parent group and net of U.S. and foreign withholding taxes." The rate of return, shown in Figure 2, is not directly comparable to rates of return computed from corporate financial data. An analysis of rates of return based on financial data is provided in Chapter 4.

Major FDI-Related Transactions in the U.S. Energy Industry, 1990

Acquisitions

- British conglomerate Hanson PLC acquired Peabody Holding Company for $1,223 million including $725.6 million in cash paid to Newmont Mining for its 55-percent ownership share of Peabody.

- Petroleos de Venezuela S.A., Venezuela's national oil company, became the sole owner of Citgo Petroleum Corp. (main asset, 305,000 barrels per day refinery), paying Southland Corporation $675 million for its 50-percent interest.

- Bermuda-based Arethusa (Offshore) Ltd. bought Zapata Corporation's 12-rig offshore drilling fleet and related assets for $298 million.

- Mosvold Shipping A.S., a Norwegian company, purchased Dual Drilling Co., a subsidiary of the Bechtel Group Inc., for $170 million.

- Bridge Oil (USA) Inc., subsidiary of Australia's Bridge Oil Ltd., acquired the south Texas and Gulf of Mexico oil and gas properties of Texas Oil and Gas Corp., a USX Corp. subsidiary, for $159.3 million.

- Norcen Energy Resources Ltd., Canada, acquired U.S. based Skelgas Group Inc., a propane marketer, for $156.7 million (Canadian, $181.9 million).

- Ashland Coal Company, part owned by Germany's Saarberg Coal AG and Carboex International of Spain, spent $144 million for the assets and operations of BP America's Mingo Logan Coal Co.

- Star Enterprise, a Texaco and Aramco joint venture, closed on a $82.5 million deal to buy 128 Florida convenience stores from Phil Handy's TOC Retail.

- Foreign-affiliated Santa Fe Energy Resources, with a partner, purchased Patrino Fee property and Hill Property royalty interest in California. The $55 million purchase price was paid to Mission Resource Partners L.P.

- Saudi-owned Aramco contributed $50 million towards the $100 million upgrade and expansion of Star Enterprise's Port Arthur Refinery.

Divestitures

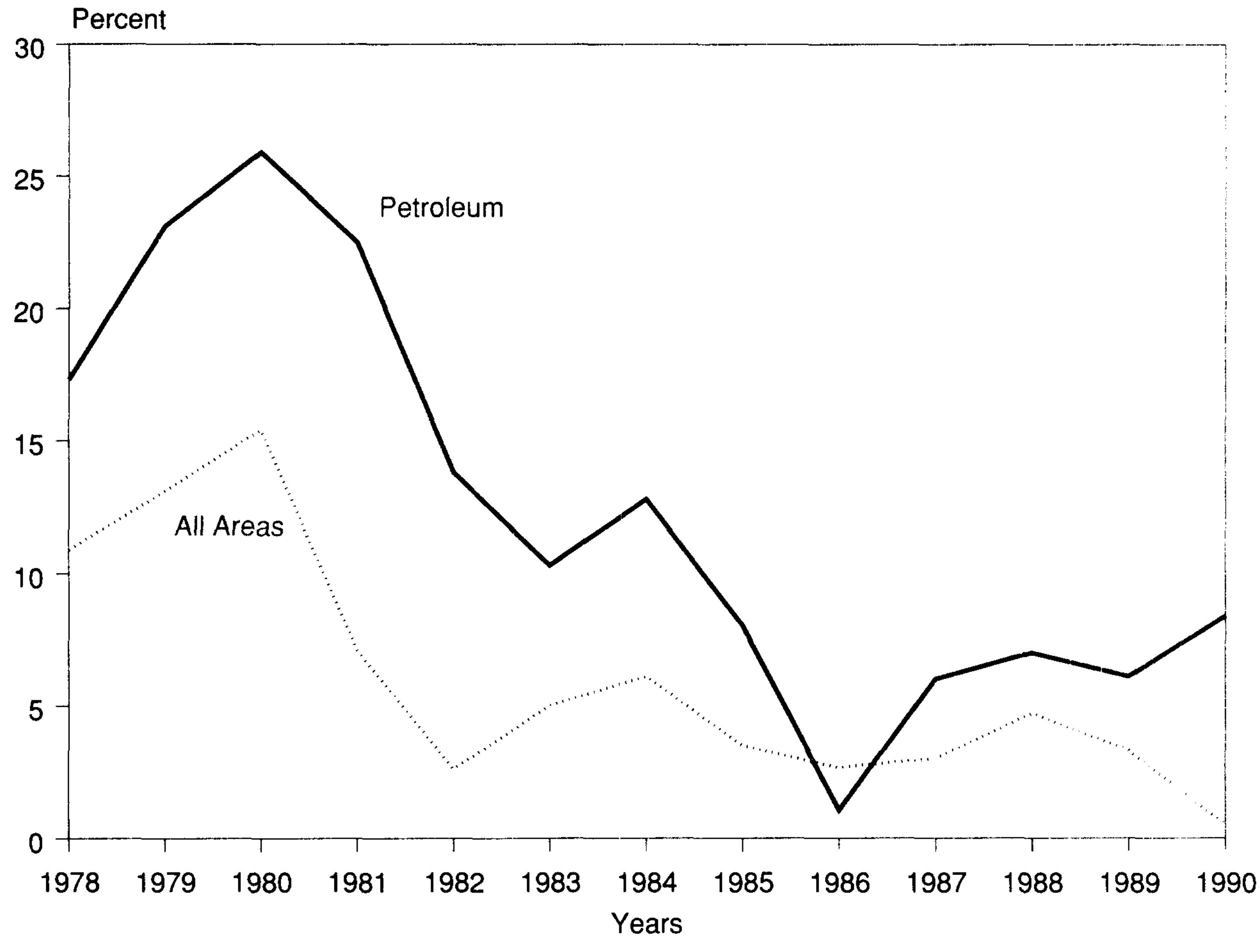
- Placer Dome Inc. sold its U.S. oil and gas subsidiary, Prairie Holding Company, to Unocal's Union Exploration Partners Ltd. for $336 million.

- Sunshine Mining Co. disposed of its domestic oil and gas reserves to Sonat Inc. of Houston for $150 million. The transaction was completed in January 1991.

- Zeigler Holding Company purchased all of BP's remaining U.S. coal operations, namely, the Franklin Coal and Old Ben Coal companies. BP received $115 million from the sale.

- Seagull Energy Corp. bought Wacker Oil Company from Costain Holdings Inc. for $69 million.

Figure 2. Rates of Return on Foreign Direct Investment in the United States, 1978-1990[a]



[a]This rate of return is defined as annual income from FDI accruing to foreign parents, divided by the average of the FDI position of foreign parents at the beginning and end of the year.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1982, August 1988, and August 1991).

1990 (Figure 1), petroleum's share of total direct investment abroad continued to slide, falling to 14 percent of the total, which was about half of the peak share of 1982-1983 (Table 1). The large increase in additions to direct investment in foreign petroleum was due to the absence of large asset divestitures in 1990 as compared with 1989. The net equity capital position of U.S.-based companies fell by a huge $5.5 billion in 1989 but rose by a modest $0.2 billion in 1990.[22] Also, foreign petroleum earnings rose $3 billion, largely due to higher oil prices in 1990, while $1 billion less was paid back to U.S. ownership interests in the form of dividends.[23] By far, the largest acquisition of foreign petroleum assets by a U.S. company in 1990 was Oryx Energy's gain of interests in oil and gas properties from British Petroleum, for $1.1 billion. These properties are mainly in the United Kingdom section of the North Sea.

Direct investment abroad measures only the net flow of funds between U.S. companies and their foreign-based affiliates. A positive change in this measure does not necessarily indicate a greater level of expenditures by U.S. companies abroad. Capital and exploratory expenditures for foreign petroleum are a more accurate measure of U.S. companies' targets of investment

[22]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), p. 82.
[23]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), p. 83.

abroad. Based on data reported on Form EIA-28 to EIA's Financial Reporting System (FRS),[24] capital and exploration expenditures for U.S.-based major petroleum companies' foreign petroleum operations decreased from $18.7 billion to $16.7 billion in 1990. This decline was due to a reduction in merger and acquisition activity from the 1989 level. In particular, Exxon expended $4.1 billion to acquire Texaco Canada in 1989. Excluding the effects of mergers and acquisitions, the FRS companies' capital and exploration expenditures for foreign petroleum were up 19 percent between 1989 and 1990. Oil and gas exploration and development expenditures accounted for over three-quarters of the majors' foreign spending. In recent years, the share of their exploration and development expenditures directed abroad rose from 26 percent in 1985 to 47 percent in 1990.

Sources of Foreign Direct Investment in U.S. Petroleum

Over the last two years for which data are available, OPEC nations registered the largest total increase in petroleum-related FDI among investing regions. OPEC-based investors' FDI increased by $3.3 billion between 1988 and 1990, thus boosting their share of total petroleum-related FDI from 2 percent to 11 percent (Table 2). The growth in OPEC members' share mainly reflects the investments of Venezuela's PDVSA and

Table 2. Geographic Sources of Foreign Direct Investment in U.S. Petroleum, 1986-1990[a]

Source	1986	1987	1988	1989	1990	1986	1987	1988	1989	1990
	(million dollars)					(percent of total)				
All Countries	29,094	37,815	36,006	37,201	38,004	100.0	100.0	100.0	100.0	100.0
Canada	1,432	1,088	1,181	1,233	1,417	4.9	2.9	3.3	3.3	3.7
Europe[b]	26,139	35,700	33,499	32,476	31,197	89.8	94.4	93.0	87.3	82.1
Netherlands	(c)	(c)	9,045	9,889	10,527	(c)	(c)	25.1	26.6	27.7
United Kingdom	11,758	17,950	19,522	16,545	15,310	40.4	47.5	54.2	44.5	40.3
Japan	-34	-56	-64	-35	-38	-0.1	-0.1	-0.2	-0.1	-0.1
Latin America[d]	889	645	711	1,589	3,195	3.1	1.7	2.0	4.3	8.4
Other	668	438	679	1,938	2,233	2.3	1.2	1.9	5.2	5.9
OPEC[e]	(c)	619	748	2,754	4,063	(c)	1.6	2.1	7.4	10.7

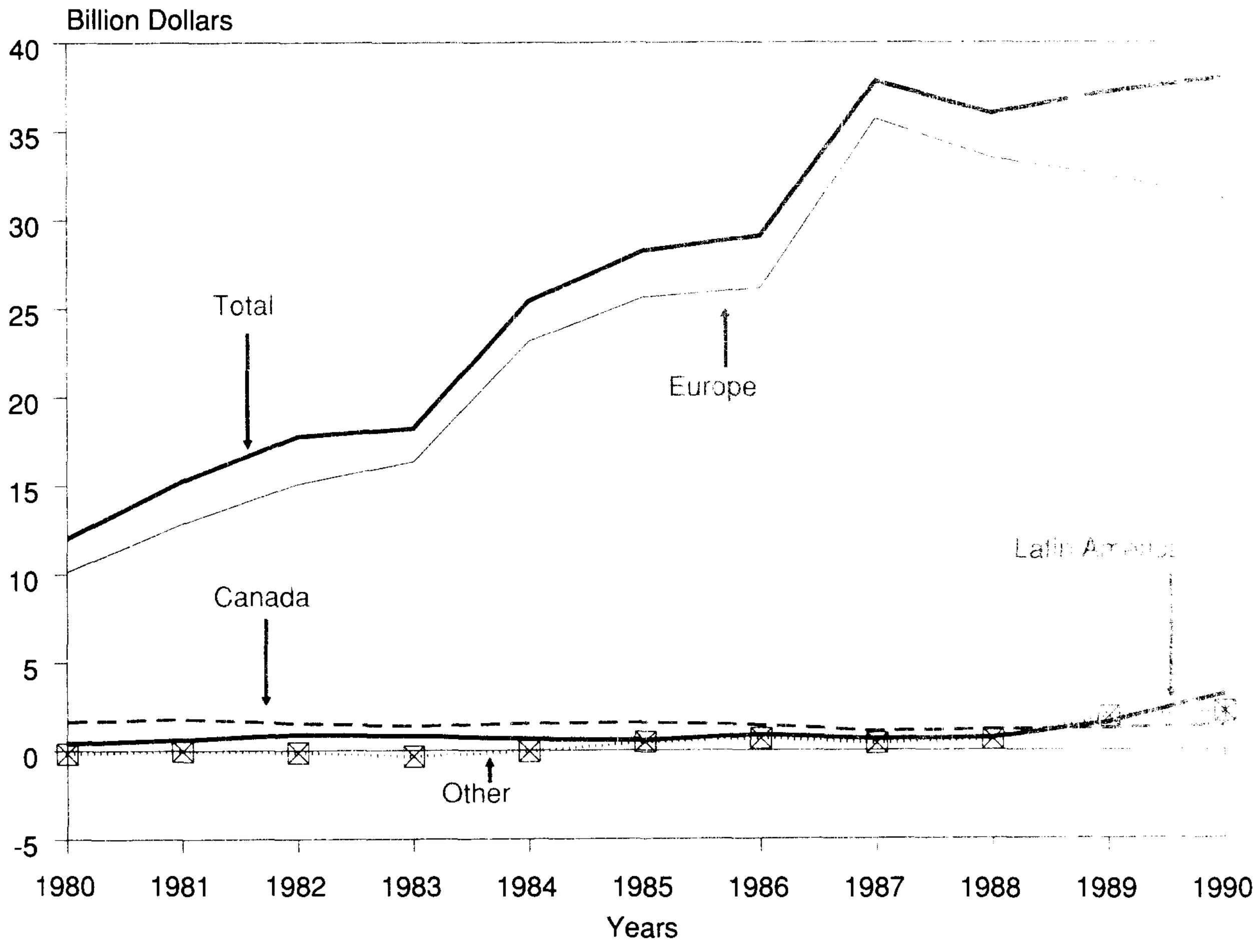
[a]Data for 1987, 1988, and 1989 were revised by the U.S. Department of Commerce.
[b]Europe consists of Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Sweden, Switzerland, and the United Kingdom.
[c]Data withheld by the U.S. Department of Commerce to prevent disclosure.
[d]Latin America consists of Western Hemisphere nations excluding the United States, Puerto Rico, the U.S. Virgin Islands, and Canada.
[e]The OPEC countries are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, Venezuela, and the United Arab Emirates.
Note: Total may not equal sum of components due to independent rounding.
Source: U.S Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991).

[24]See Energy Information Administration, *Performance Profiles of Major Energy Producers 1990,* DOE/EIA-0206(90) (Washington, DC, December 1991), for detailed financial and operating information concerning the FRS companies and Form EIA-28. Based on data contained in Arthur Andersen & Co., *Oil and Gas Reserve Disclosures* (Chicago, 1991), the 23 FRS companies accounted for 92 percent of foreign exploration and development expenditures made by U.S.-based companies in 1990.

Saudi Arabia's Aramco, which were discussed in the previous section.

The sharpest decline in the share of petroleum-related FDI was in United Kingdom (U.K.) ownership interests. The U.K. share dropped from 54 percent in 1988 to 40 percent in 1990. The decline in the U.K. share reflected increased dividend payouts to parent companies and repayments of debt to parents. In 1989, the decline in the U.K. share was traceable to a large drop ($2.1 billion)[25] in reinvested earnings,[26] which suggests that dividend remittances to U.K. parents were increased substantially that year. In 1990, a total of $1.8 billion[27] in repayment of debt by affiliates to their U.K. parents more than accounted for the drop in U.K. petroleum-related FDI. The drop in FDI of U.K. investors largely accounted for the drop in the level of FDI from Europe in recent years (Figure 3).[28]

Figure 3. Sources of Foreign Direct Investment in U.S. Petroleum by Geographic Area, 1980-1990



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991).

[25]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), p. 48.

[26]For FDI purposes, earnings are defined as the foreign parent's share in net income from its U.S. affiliate, after having made provision for U.S. income taxes. Earnings are either distributed to foreign parents or reinvested (i.e., retained by the affiliate).

[27]U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991), p. 48.

[28]One component of FDI is the affiliates' net intercompany debt position with respect to their foreign parent companies. This component can be negative if the affiliates' receivables from their foreign parents exceed the affiliates' payables to their foreign parents. In the case of Japanese petroleum-related FDI, which has been negative (Table 2), the affiliates' negative net intercompany debt position exceeds the value of their parent companies' equity position in them.

To understand developments in foreign investor interest in U.S. petroleum operations, it is useful to examine the changes in the components of FDI. Of particular interest is the role of reinvested earnings since this measure is an indicator of funds available for affiliates' capital expenditures in the United States. Reinvested earnings for petroleum-related FDI totaled $1.4 billion in 1990, up from negative $2.0 billion in 1989 and at the highest level since 1984 (Table 3).[29] Reinvested earnings can increase due to increased earnings or reduced dividends paid to foreign ownership interests or both.

Earnings from petroleum-related FDI for 1989 were not reported by the U.S. Department of Commerce (Table 4). However, based on the strong statistical relationship

Table 3. Additions to Foreign Direct Investment in U.S. Petroleum, 1977-1990[a]
(Million Dollars)

Year	Total Additions	Equity and Intercompany Account Net Capital Flows	Reinvested Earnings of Incorporated Affiliates	Valuation Adjustments
1977	653	52	601	0
1978	1,189	303	940	-54
1979	2,144	499	1,645	0
1980	2,294	-59	2,161	192
1981	3,046	919	2,246	-119
1982	2,414	1,409	1,002	3
1983	549	-57	565	40
1984	7,191	5,581	1,628	-19
1985	2,870	2,581	565	-276
1986	824	1,776	-1,114	162
1987	8,721	7,719	757	245
1988	-1,809	-2,284	164	311
1989	1,195	1,362	-2,004	1,837
1990	802	-670	1,442	30

[a]Data for 1987, 1988, and 1989 were revised by the U.S. Department of Commerce.

Note: Totals may not equal sum of components due to independent rounding. Equity and intercompany account capital flows measure the investment and lending from the foreign investor to its U.S. affiliate on a net basis. Since the measure is on a net basis, it can be negative if repayments by U.S. affiliates to their foreign parents exceed the investment by the parents in the affiliates. Reinvested earnings are earnings of the U.S. affiliate due the foreign investor less dividends declared. Valuation adjustments primarily reflect the difference between transaction values and values on the U.S. affiliates' books. However, the large valuation adjustment in 1989 was largely due to an industry reclassification of a foreign affiliate.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1982, October 1984, August 1986, August 1987, August 1988, August 1989, August 1990, and August 1991). U.S. Department of Commerce, Bureau of Economic Analysis, *Selected Data on Foreign Direct Investment in the United States, 1950-79* (Washington, DC, December 1984).

[29]Equity and intercompany account capital flows, shown in Table 3, measure the investment and lending from the foreign investor to its U.S. affiliate on a net basis. Since this measure is on a net basis, it can be negative if, as occurred in 1980, 1983, 1988, and 1990, repayments by U.S. affiliates to their foreign parents exceed the investment by the parents in the affiliates. Reinvested earnings are earnings of the U.S. affiliate due the foreign investor less dividends declared. Valuation adjustments primarily reflect the difference between transaction values and values on the U.S. affiliates' books. The large valuation adjustment in 1989 was largely due to an industry reclassification of a foreign affiliate.

Table 4. Distributed and Reinvested Earnings for Foreign Direct Investment in U.S. Petroleum, 1981-1990[a] (Million Dollars)

Year	Earnings	Distributed	Reinvested
1981	3,118	872	2,246
1982	2,241	1,239	1,002
1983	1,593	1,028	565
1984	2,402	774	1,628
1985	1,668	1,103	565
1986	-209	904	-1,114
1987	1,302	545	757
1988	1,762	1,598	164
1989	(b)	(b)	-2,004
1990	2,309	867	1,442

[a]Data for 1987, 1988, and 1989 were revised by the U.S.Department of Commerce.
[b]Data withheld by the U.S. Department of Commerce to prevent disclosure.
Note: Totals may not equal sum of components due to independent rounding.
Source: 1987-1990: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991). 1986: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1988). 1985: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1987). 1984: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1986). All 1983 data and reinvested earnings for 1981 and 1982: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1985). Earnings for 1981 and 1982: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, October 1984); distributed earnings for 1981 and 1982 were computed as the difference between earnings and reinvested earnings.

between petroleum-related FDI earnings and income,[30] 1989 earnings can be estimated at $1.3 billion which, added to the negative $2.0 billion for reinvested earnings in 1989, yield an estimate of distributed earnings of $3.3 billion. Based on these estimates, reinvested earnings rose because earnings increased by $1 billion, while dividends distributed to foreign investors fell by over $2 billion (Table 4). However, debt repayment of $1.1 billion ($1.8 billion of which was traceable to U.K. interests) offset much of the increase in petroleum-related FDI coming from reinvested earnings.

Foreign Direct Investment and Rates of Return in U.S. Coal

The largest FDI-related transaction in U.S. energy involved coal production. Hanson PLC, of the United Kingdom, acquired 100 percent ownership of Peabody Holding Company for $1,223 million (see Box on page 6). This acquisition included payment of $725.6 million in cash to Newmont Mining for Newmont's 55-percent share of Peabody. Peabody is the number one producer of coal in the United States. However, because Hanson is a highly diversified company with operations in consumer products, industrial products, and retailing, the U.S. Department of Commerce apparently classified the 1990 acquisition of the entirety of Peabody Holding Company in an industry other than coal production.

One other FDI-related transaction involving U.S. coal production exceeded $100 million in 1990. Ashland Coal, which is 14-percent owned by Saarbergwerke AG, of Germany, and 9-percent owned by Carboex International, of Spain, acquired BP America's Mingo Logan Coal Company and its low-sulfur coal reserves for $144 million. This transaction had little effect on coal-related FDI since it effectively only transferred assets between two foreign-affiliated companies. BP

[30]See footnote 16 for the definitions of earnings and income. The maximum likelihood estimate, with first-order autoregressive error terms, of the relationship between petroleum FDI earnings (*E*), petroleum FDI income (*I*), and trend (*T*) for annual observations for 1981 through 1988 is (t-ratios in parentheses) $E = 11{,}133 + 0.945\,I - 135\,T$, where T = 81, 82,..., 88.
(12.3) (34.9) (12.9)

America sold the remainder of its U.S. coal assets to Zeigler Holding Company, for $115 million. On balance, the coal-related FDI transactions in 1990 produced only a slight $38 million rise in the level of FDI (Table 5).

After steadily rising from a negative 12 percent in 1985 to over 3 percent in 1988, the rate of return to coal-related FDI fell to near zero in 1990. This path parallels the rate of return to major petroleum companies' coal production operations.[31]

Table 5. Foreign Direct Investment, Additions to Foreign Direct Investment, and Rate of Return on Foreign Direct Investment in U.S. Coal, 1981-1990[a]

Investment and Rate of Return	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	(million dollars)									
FDI in U.S. Coal	1,135	1,208	1,281	2,637	2,871	3,480	3,323	5,275	5,567	5,605
Additions to FDI in U.S. Coal	657	73	73	1,356	234	609	-157	1,952	292	38
	(percent)									
Rate of Return on FDI in U.S. Coal	1.9	-3.0	(b)	-7.0	-12.0	-7.1	-2.1	3.4	1.8	0.3

[a]Data for 1987, 1988, and 1989 were revised by the U.S. Department of Commerce.
[b]Less than 0.05 percent.
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington, DC, August 1991).

[31]Energy Information Administration, *Performance Profiles of Major Energy Producers 1990*, DOE/EIA-0206(90) (Washington, DC, December 1991), Table B6.

3. The Role of Foreign-Affiliated Companies in U.S. Energy Operations

Oil and Gas Reserves and Production

The year 1990 saw an improvement in oil and gas exploration and production activity largely as a result of the sharp rise in oil prices subsequent to the Iraqi invasion of Kuwait. During the four months following the invasion, the average number of drilling rigs in operation rose 8 percent compared to the same four months of 1989.[32] For the year 1990, oil well completions rose by 12 percent.[33] Although U.S. oil reserves continued to decline in 1990, nearly 90 percent of production was replaced through reserve additions, up from a replacement rate of 76 percent during the previous year (Table 6). Natural gas exploration and production activity also showed an improvement, as indicated by the 9-percent increase in the number of natural gas well completions between 1989 and 1990.[34] The natural gas market, in part, was boosted by the expectation that coal-bed methane tax subsidies would not be available for wells completed after 1990. In 1990, natural gas drilling was further aided by the expectations of increased natural gas consumption and prices in the 1990's.[35] As a result of the additional gas drilling activity, U.S. natural gas reserves rose 1 percent in 1990.

The U.S. oil (crude oil and natural gas liquids) reserve position of foreign affiliates receded slightly during 1990 from an 18.8-percent share of total U.S. oil reserves in 1989 to 18.6 percent in 1990. This decline was largely traceable to a redetermination of Alaskan North Slope oil reserves among operating companies, which led to a reduction in BP America's oil reserves of 170 million barrels in 1990.[36] Apart from this redetermination, the level of foreign affiliates' oil reserves were nearly unchanged in 1990 from 1989's level.

Natural gas reserves of foreign affiliates rose by over 7 percent, resulting in an increase in the foreign share of U.S. natural gas reserves from 9.2 percent in 1989 to 9.8 percent in 1990. Nearly all of the increase can be attributed to BP America's upward revision of 1 trillion cubic feet in their natural gas reserves. This revision reflected the installation of a gas handling facility (the GHX-2) to inject natural gas into Alaskan North Slope oil wells. Although the purpose of the facility is to recover greater quantities of oil, its operation utilizes natural gas, thus transforming some of BP America's sub-economic Alaskan natural gas fields into economic natural gas reserves. Excluding this revision, foreign affiliates' U.S. gas reserves increased at the same 1-percent rate that total U.S. gas reserves rose between 1989 and 1990.

The late 1990 increase in oil prices acted as a temporary stimulus to U.S. oil production. Between September and October of 1990 alone, oil production rose nearly 5 percent, and for the last quarter of 1990, U.S. oil production was more than 2 percent above the level of the fourth quarter of 1989.[37] However, the fourth quarter gain in U.S. oil production was not sufficient to offset a downward trend in U.S. oil production. For the year 1990 as a whole, U.S. oil production totaled 2 percent less than the previous year (Table 7). Foreign affiliates registered a steeper 5-percent decline, reducing their share to 16.5 percent from 16.8 percent in 1989.

[32]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 5.1.

[33]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 5.2.

[34]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 5.2.

[35]Energy Information Administration, *Annual Energy Outlook 1990*, DOE/EIA-0383(90) (Washington, DC, January 1990), Tables 3, A1, and A2.

[36]British Petroleum, Plc, *Annual Report and Accounts 1990*.

[37]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 3.1a.

This decrease was due to reduced production by BP America and Shell Oil. BP America's reduction was concentrated in Alaska's Prudhoe Bay and reflected the natural decline of this aging field and to the redetermination of BP's U.S. oil interests (noted above) which reduced BP's oil reserves by nearly 7 percent and their share of Prudhoe Bay production. Shell Oil explained that their decreased U.S. oil and gas production was due primarily to declines in output from older fields not fully offset by new production. Excluding BP and Shell, the remaining foreign affiliates' U.S. oil production rose by 5 percent between 1989 and 1990.

Although U.S. crude oil prices at the wellhead rose by over 25 percent, on an annual basis, between 1989 and 1990, wellhead natural gas prices increased by only 1 percent.[38] U.S. natural gas production was up 3 percent (Table 7), in large part because of sharply increased drilling of natural gas wells in recent years. However, U.S. natural gas consumption was nearly constant from 1989 to 1990, and most of the increase in

Table 6. Domestic Oil and Dry Natural Gas Proved Reserves and Production for Foreign-Affiliated U.S. Companies, 1989 and 1990

Fuel Type	Foreign-Affiliated Companies[a]	U.S. Total	Foreign-Affiliated Share of U.S. Total
	(million barrels)		(percent)
Crude Oil and Natural Gas Liquids Proved Reserves			
December 31, 1989	6,438	34,270	18.8
December 31, 1990	6,294	33,840	18.6
1990 Production	540	3,237	16.7
1990 Gross Reserve Additions[b]	396	2,807	14.1
1990 Ratio of Gross Reserve Additions to Production	0.73	0.87	NM
	(billion cubic feet)		
Dry Natural Gas Proved Reserves			
December 31, 1989	15,455	167,116	9.2
December 31, 1990	16,600	169,346	9.8
1990 Production	1,457	17,233	8.5
1990 Gross Reserve Additions[b]	2,602	19,463	13.4
1990 Ratio of Gross Reserve Additions to Production	1.79	1.13	NM

[a]Reserves and production are on a net ownership interest basis. The reserves and production data, under each fuel type, are for companies identified as foreign affiliated and reporting oil and/or natural gas production during 1990.

[b]Gross reserve additions = annual change in reserves + annual production.

NM = Not meaningful

Source: Foreign-affiliated data: Companies' Form 10-K filed with the U.S. Securities and Exchange Commission and Annual Reports to Shareholders. U.S. totals: Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1990 Annual Report*, DOE/EIA-0216(90) (Washington, DC, September 1991).

[38]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Tables 9.1 and 9.11.

Table 7. Net Production of Petroleum and Dry Natural Gas in the United States by Foreign-Affiliated U.S. Companies, 1988-1990

Company	Crude Oil and Natural Gas Liquids[a] (thousand barrels per day) 1988	1989	1990	Dry Natural Gas[a] (billion cubic feet) 1988	1989	1990
BP America	857.9	784.7	737.0	[b]69.2	[b]89.1	[b]115.0
Shell Oil Company	527.9	493.2	460.3	581.0	532.0	517.0
Du Pont	106.6	112.3	120.5	238.0	274.0	237.0
Santa Fe Energy Resources	53.3	50.7	52.1	33.8	29.8	37.4
American Petrofina	17.3	22.4	22.5	41.8	72.1	74.8
BHP Petroleum (Americas)	15.9	12.9	12.9	55.7	49.7	47.2
Total Minatome Corporation	11.5	12.8	11.5	41.8	53.9	51.2
Anadarko Petroleum	9.5	9.7	11.1	128.5	141.5	148.2
Presidio Oil Co.	1.5	4.4	9.1	8.7	17.5	22.4
Hondo Oil and Gas	9.0	9.1	7.8	13.7	15.6	14.4
Adobe Resources Corporation	5.0	4.6	5.3	24.2	22.1	27.3
Bridge Oil (USA)	0.9	3.7	4.9	2.0	14.0	36.4
Elf Aquitaine Incorporated	4.7	4.4	4.4	28.2	30.0	33.5
Coho Resources	2.4	2.6	3.1	0.1	(c)	0.1
Ultramar	2.4	2.7	2.6	8.0	10.1	13.2
Wintershall Corporation	2.4	2.3	1.9	17.3	17.6	14.8
Sunshine Mining Company	2.6	2.3	1.6	11.9	12.9	11.0
Deminex U.S. Oil Company	1.8	1.7	1.6	2.7	2.8	3.3
Chieftain Development International	0.0	1.0	1.5	0.0	3.3	13.9
Triton Energy Corporation	2.3	1.8	1.4	8.1	6.5	3.9
Norcen Energy Resources	1.4	1.5	1.1	7.5	8.4	6.7
Placer Dome Incorporated	2.4	2.2	0.9	7.7	8.6	3.6
Avalon Corp.	1.1	1.0	0.7	0.4	0.5	0.3
Unimar Company	2.7	2.0	(d)	8.6	9.8	(d)
Gulf Resources & Chemicals	0.9	1.0	0.0	5.4	4.3	0.0
Total Petroleum North America	5.5	0.0	0.0	11.3	0.0	0.0
Home Petroleum	4.3	(e)	0.0	10.9	(e)	0.0
Other Companies	5.3	5.7	4.8	25.7	26.0	24.4
Total Foreign Affiliated	1,658.5	1,552.7	1,480.6	1,392.2	1,452.1	1,457.0
Total United States	9,818.0	9,219.0	8,994.0	17,102.0	17,311.0	17,830.0
Percent Foreign-Affiliated	16.9	16.8	16.5	8.1	8.4	8.2

[a]Unless otherwise noted, company production is net ownership interest production.
[b]Excludes natural gas consumed in Alaskan operations.
[c]Less than 0.05.
[d]U.S. oil and gas assets distributed to partners (Ultramar and Allied-Signal) in 1990.
[e]Acquired by Presidio Oil Company in 1989.
Note: Totals may not equal sum of components due to independent rounding.
Sources: Company data: Form 10-K reports to the U.S. Securities and Exchange Commission and Annual Reports to Shareholders. Totals for the United States: Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991).

production contributed to net increases in storage.[39] During 1990, the buildup of natural gas in storage and continued increases in production subsequently put strong downward pressure on natural gas prices in early 1991. Foreign affiliates' U.S. natural gas production was essentially flat between 1989 and 1990.

The foreign oil reserves of the FRS companies,[40] which were twice as large as the U.S. oil reserve holdings of foreign affiliated companies, increased by over 2 percent in 1990 (Table 8). Among the foreign regions in which the FRS companies operate, the largest increases were registered in Europe and Africa. In Europe, purchases of proved reserves in the North Sea by Amerada Hess and Oryx Energy totaled over 200 million barrels.[41] Further, due to increased reserve extensions and discoveries, 9 of 13 FRS companies reported higher European reserve additions in 1990.[42] In Africa, important sources of added reserves in 1990 included Amoco's waterflood projects in Egypt, Phillips Petroleum's addition of natural gas liquid reserves due to its plans to build a natural gas liquefaction plant in Nigeria, and Chevron's additional 41 million barrels of reserves which were added through extensions and discoveries.[43]

Refining and Gasoline Marketing

The foreign-affiliated companies' share of total U.S. crude distillation capacity increased from 27.2 percent in 1989 to 27.9 percent in 1990 (Table 9), largely due to the addition of three refineries to foreign-affiliate ownership:

- Castle Energy activated the Lawrenceville refinery in Illinois which it obtained for $5.9 million in 1989. The Lawrenceville refinery has an operating capacity of 55,000 barrels per day (bd).
- Petroleos de Venezuela S.A.'s (PDVSA) subsidiary Citgo Petroleum purchased a 50-percent interest in Seaview Oil Company. Seaview Oil Company is a limited partnership which owns and operates a 44,400 bd New Jersey refinery.
- Transworld Oil USA acquired Calcasieu Refining's Louisiana refinery which has crude distillation capacity of 13,500 bd.

In the most recent five-year period (1986-1990), 72 percent of the total growth in foreign affiliates' U.S. refining capacity was due to acquisitions by the state energy companies of the OPEC nations of Venezuela and Saudi Arabia.[44] The addition of Seaview Oil Company to the fold of PDVSA's U.S. affiliates followed a series of other Venezuelan investments in U.S. petroleum in recent years. These investments included the purchase of Champlin Refining and Citgo Petroleum, and the initiation of a joint venture (Uno-Ven) with Unocal. Together, these investments brought Venezuela's state energy company's share of total U.S. refining capacity to 4 percent. Saudi Arabia entered U.S. downstream petroleum operations in earnest when, in 1988, Aramco began a joint enterprise with Texaco. The joint venture was called Star Enterprise and included three of Texaco's U.S. refineries. Star Enterprise commenced operations in 1989. Taken together, these two nations' transactions were responsible for bringing the OPEC-affiliate share of total U.S. refining capacity to 7.9 percent of the total in 1990.

The role of foreign affiliates in U.S. gasoline supply roughly paralleled their increased share of U.S. refining capacity (Table 10). By 1990, gasoline marketing operations of foreign-affiliated companies accounted for 31.5 percent of total U.S. gasoline sales versus a 28.4-percent share in 1989. This increased share is traceable largely to two events: first, foreign affiliates' share of

[39]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991), Table 4.2.

[40]Based on data contained in Arthur Andersen & Co., *Oil & Gas Reserve Disclosures* (Chicago, 1991), the FRS companies accounted for 95 percent of the foreign oil reserves of U.S. companies and 90 percent of the foreign natural gas reserves of U.S. companies in 1990.

[41]Amerada Hess Corporation, *Annual Report 1990* and Oryx Energy Company, *Annual Report 1990*.

[42]Energy Information Administration, Form EIA-28.

[43]Amoco Corporation, *Annual Report 1990;* Chevron Corporation, *Annual Report 1990;* and Phillips Petroleum Company, *Annual Report 1990*.

[44]Based on Table 9, affiliates of the state energy companies of Venezuela (Citgo Petroleum, Uno-Ven, Champlin Refining, and Seaview Petroleum) and Saudi Arabia (Star Enterprise) had total crude distillation capacity of 1,241 thousand bd in 1990, or 7.9 percent of the U.S. total crude distillation capacity. Before 1986, these two OPEC nations had no affiliates in U.S. petroleum refining. Between 1985 and 1990, U.S. crude distillation capacity of foreign affiliates increased from 2,656 thousand bd (Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1989*, DOE/EIA-0466(89) (Washington, DC, December 1990), Table 9) to 4,379 thousand bd (Table 9).

Table 8. Foreign Crude Oil and Natural Gas Liquids Reserve Interest for FRS Companies, 1990 and Percent Change from 1989

Crude Oil and NGL Reserve Interest	Total Foreign	Canada	OECD Europe	Africa	Middle East	Other Eastern Hemisphere	Other Western Hemisphere
	(million barrels)						
1990							
Total Crude and NGL Reserve Interest[a]	13,592	2,571	4,325	1,706	1,788	2,348	854
	(percent)						
Percent Distribution by Geographic Region, 1990							
Total Crude and NGL Reserve Interest	100.0	18.9	31.8	12.6	13.2	17.3	6.3
Percent Change from 1989							
Total Crude and NGL Reserve Interest	2.5	-5.3	9.2	6.9	-3.1	1.3	3.0
Share of Market Economies, 1990[b]							
Total Crude and NGL Reserve Interest	1.5	31.7	30.0	2.8	0.3	8.9	0.8

[a]The components of total foreign crude oil and natural gas liquids reserve interest are net ownership interest reserves (88.4 percent) and "Other Access" reserves (11.6 percent). "Other Access" reserves include proportional interest in investee reserves and foreign access reserves.

[b]Excludes U.S.S.R., China, and Eastern Europe.

Note: Totals may not equal sum of components due to independent rounding. While five of the FRS companies are foreign-affiliated, their foreign reserves are a small portion of the FRS total.

Sources: FRS companies: Energy Information Administration, *Performance Profiles of Major Energy Producers 1990,* DOE/EIA-0206(90) (Washington, DC, December 1991). Market economies: British Petroleum Company, *BP Statistical Review of World Energy* (London, June 1991).

U.S. gasoline sales in 1990 included for the first time a full year of gasoline sales for Uno-Ven, which commenced operations in late 1989; second, 1990 foreign-affiliated gasoline totals also included, for the first time, sales made by Citgo Petroleum (due to the gain of 100-percent ownership by PDVSA) to Southland Corporation. The effects of both events accounted for three-quarters of the increase in foreign affiliates' share of U.S. gasoline supplied between 1989 and 1990.

The number of foreign affiliates' branded retail gasoline outlets increased by less than 1 percent between 1989 and 1990.[45] Two transactions added to the foreign affiliates' outlet total in 1990:

[45]Until the 1989 reporting year, the U.S. total for branded retail outlets was taken from the U.S. Department of Commerce's publication, *Franchising in the Economy.* This publication defined a retail outlet as a service station establishment with 50 percent or more of their dollar volume from petroleum product sales. *Franchising in the Economy* was discontinued after the 1988 reporting year. As a consequence, for the year 1989, an estimate of the U.S. total for branded retail outlets was obtained from the petroleum industry journal, *National Petroleum News.* In their October 1991 issue, the *National Petroleum News* provided the results of their survey which estimated that there was a total of 210,120 retail gasoline outlets in the United States in 1990. However, in this latter estimate, a retail gasoline outlet is defined as any establishment selling gasoline at retail. Consequently, this estimate is not comparable to earlier estimates. See *National Petroleum News* (October 1991), pp. 120-123, for an additional discussion on retail outlet population estimates.

Table 9. U.S. Refinery Operations of Foreign-Affiliated U.S. Companies, 1986-1990

Company	Number of Refineries[a]					Total Crude Distillation Capacity[a] (thousand barrels per day)				
	1986	1987	1988	1989	1990	1986	1987	1988	1989	1990
Shell Oil Company	7	7	7	7	7	1,046	1,066	1,083	1,079	1,083
BP America	4	4	5	5	5	668	668	757	757	734
Star Enterprise	NF	NF	3	3	3	NF	NF	615	615	615
Du Pont	6	6	6	5	5	393	394	397	407	407
Citgo Petroleum	1	1	1	1	1	320	320	305	282	305
Total Petroleum, Ltd.	3	4	4	4	4	154	191	184	190	198
Salomon Inc./ Hill Petroleum	3	3	NF	NF	NF	154	156	NF	NF	NF
American Petrofina	2	2	2	2	2	145	145	165	165	165
Uno-Ven	NF	NF	NF	1	1	NF	NF	NF	147	147
Champlin Refining Co.	NF	1	1	1	1	NF	155	130	130	130
Clark Oil & Refining	NF	NF	2	2	2	NF	NF	128	122	122
Pacific Resources	NF	NF	NF	1	1	NF	NF	NF	79	94
Tesoro Petroleum	NF	NF	NF	1	1	NF	NF	NF	72	72
American Ultramar Ltd.	1	(b)	1	1	1	17	(b)	65	69	66
Pacific Refining.	NF	NF	1	1	1	NF	NF	55	55	55
Castle Energy	0	0	0	0	1	0	0	0	0	55
Sargent Holdings, Ltd.	1	1	1	1	1	33	35	35	44	45
Seaview Petroleum	NF	NF	NF	NF	1	NF	NF	NF	NF	44
Hondo Oil	NF	1	2	1	1	NF	23	52	30	28
Transworld Oil USA	0	0	0	0	1	0	0	0	0	14
Atlantic Petroleum	1	1	(c)	0	0	125	125	(c)	0	0
Fletcher Oil & Refining	1	1	(d)	0	0	30	30	(d)	0	0
Asamera Inc.	1	(e)	0	0	0	28	(e)	0	0	0
E-Z Serve Inc.	NF	1	(f)	0	0	NF	20	(f)	0	0
MacMillan Ring-Free Oil Company	2	1	(g)	0	0	20	14	(g)	0	0
Total Foreign Affiliated	33	34	36	37	40	3,133	3,342	3,971	4,243	4,379
Total United States	219	213	204	205	202	15,566	15,915	15,655	15,572	15,676
Percent Foreign	15.1	16.0	17.6	18.0	19.8	20.1	21.0	25.4	27.2	27.9

[a]Refineries operable as of December 31st in each year.
[b]Hanford, CA, refinery shutdown in 1987. Acquired Union Pacific's Wilmington, CA, refinery in 1988.
[c]Sold to Sun Co. in 1988
[d]Sold to Pauley Petroleum (Hondo Oil in 1990) in 1988.
[e]Sold to Total Petroleum in 1987.
[f]Shut down.
[g]Sold to Chemoil Corp. in 1988.
NF = No foreign affiliation during this period.

Sources: 1986: Energy Information Administration, *Petroleum Supply Annual 1986*, DOE/EIA-0340(86/1 (Washington, DC, May 1987). 1987: Energy Information Administration, *Petroleum Supply Annual 1987*, DOE/EIA-0340(87)/1 (Washington, DC, May 1988). 1988: Energy Information Administration, *Petroleum Supply Annual 1988*, DOE/EIA-0340(88)/1 (Washington, DC, May 1989). 1989: Energy Information Administration, *Petroleum Supply Annual 1989*, DOE/EIA-0340(89)/1 (Washington, DC, May 1990). 1990: Energy Information Administration, *Petroleum Supply Annual 1990*, DOE/EIA-0340(90)/1 (Washington, DC, May 1991).

Table 10. Branded Retail Outlets and Total Gasoline Supplied by Foreign-Affiliated U.S. Companies, 1986-1990

Company	1986	1987	1988	1989	1990
	Total Branded Retail Outlets				
Star Enterprise	(a)	(a)	(a)	10,700	10,849
Citgo Petroleum[b]	7,296	7,458	7,697	8,463	9,734
Shell Oil Company	11,133	10,947	10,847	9,763	9,389
BP America	8,100	7,550	7,700	7,560	7,531
Du Pont	6,860	5,918	4,843	4,915	4,659
American Petrofina	4,209	4,117	3,458	3,177	3,136
Uno-Ven	(a)	(a)	(a)	3,550	2,950
Total Petroleum North America	1,915	1,968	2,564	2,719	2,698
Clark Oil and Refining	NF	NF	946	944	937
Ultramar	136	300	350	350	400
Tesoro Petroleum Corp.	NF	NF	NF	0	132
Steuart Petroleum Company	NF	NF	NF	0	68
Hawaiian Independent Refinery	NF	NF	NF	25	25
Atlantic Petroleum	941	940	0	0	0
Total for Foreign-Affiliated Companies	40,590	39,198	38,405	52,166	52,508
U.S. Total[c]	120,150	115,870	112,000	111,657	210,120
Foreign-Affiliated Companies as Percent of U.S. Total	33.8	33.8	34.3	46.7	25.0
	Total Gasoline Supplied[d] (thousand barrels per day)				
Total for Foreign-Affiliated Companies[e]	1,565	1,586	1,673	2,084	2,282
U.S. Total[f]	7,034	7,206	7,336	7,328	7,235
Foreign-Affiliated Companies as Percent of U.S. Total	22.2	22.0	22.8	28.4	31.5

[a]Not in existence during this period. Star Enterprise operations began on January 1, 1989 and Uno-Ven operations began in December 1989.

[b]Jobber-supplied outlets.

[c]For 1986-1989, the total includes only service station establishments with 50 percent or more of their dollar volume from petroleum product sales. For 1990, the total includes all establishments selling gasoline at retail.

[d]Gasoline Supplied refers to average daily gasoline shipments.

[e]Disaggregated company numbers are considered proprietary by the Energy Information Administration.

[f]Total gasoline supplied.

NF = No foreign affiliation during this period.

Sources: Company station counts: *National Petroleum News Factbook*, 1987-1991, and Annual Reports to Shareholders, except for Ultramar (1986) for which data were provided by the company, Du Pont (1990) for which data came from *Du Pont Data 1990*, and Star Enterprise (1990) for which data came from *National Petroleum News* (October 1991). U.S. total outlets: 1985-1988: U.S. Department of Commerce, *Franchising in the Economy, 1987-1989* (Washington, DC, February 1989). 1989: National Petroleum News, *1990 Fact Book*. 1990: National Petroleum News, *1991 Fact Book*. Company gasoline volumes: Energy Information Administration, Form EIA-782c. Total gasoline supplied: Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-0035(91/12) (Washington, DC, December 1991).

- Star Enterprise's purchase of 128 convenience stores in Florida (with average sales of 90,000 gallons per month) for $83 million.

- American Petrofina's (which was renamed Fina Inc. in 1991) purchase of 19 convenience stores in the Minneapolis-St Paul area.

In a transaction between two foreign affiliates, Ultramar, a United Kingdom-based petroleum company, acquired 62 service stations from Du Pont's Conoco subsidiary for $44 million. The remaining increase in outlets reflected a net expansion by foreign affiliates.

In contrast to the increased foreign activity in U.S. downstream petroleum, the U.S.-based major petroleum companies continued to reduce the extent of their foreign refining operations. In 1990, Mobil sold their Italian refining and marketing operations to the Kuwait Petroleum Corporation, while Amoco withdrew completely from overseas' refining with the sale of its United Kingdom refining assets to Elf Aquitaine. As a result, the majors' share of foreign refining fell from an 11-percent share of total overseas' capacity in 1989 to a 10-percent share in 1990 (Table 11). However, despite this reduction in crude distillation capacity, the majors continued to direct capital expenditures toward the upgrading of foreign refineries. The FRS companies' capital expenditures for their foreign refining and

Table 11. Foreign Refinery Output and Capacity Statistics for FRS Companies and Foreign Industry, 1988-1990

Refinery Statistics	FRS Companies[a]	Foreign Industry[a]	FRS as Percent of Foreign Industry
	(thousand barrels per day)		
1988			
Refinery Capacity[b]	4,508	39,134	11.8
Refinery Output[c]	4,691	33,971	13.8
Percent Gasoline	28.7	20.9	19.0
Percent Distillate	39.0	36.1	14.9
Percent Other	32.2	43.0	10.3
1989			
Refinery Capacity[b]	4,414	39,827	11.1
Refinery Output[c]	4,428	34,502	12.8
Percent Gasoline	28.5	21.0	17.4
Percent Distillate	39.8	37.7	13.5
Percent Other	31.7	41.3	9.8
1990			
Refinery Capacity[b,d]	4,225	41,420	10.2

[a]Foreign FRS and foreign industry data exclude operations in Puerto Rico and the U.S. Virgin Islands, as well as China and the Soviet Bloc nations.
[b]Year-end crude distillation capacity in thousand barrels per calendar day.
[c]Total output of refined products, for FRS companies, is total output at own refineries and refineries of others for own account.
[d]Foreign industry output data for 1990 are not available.
Note: Totals may not equal sum of components due to independent rounding.
Source: FRS companies: Energy Information Administration, *Performance Profiles of Major Energy Producers 1990*, DOE/EIA-0206(90) (Washington, DC, December 1991). Foreign Industry: Energy Information Administration, *International Energy Annual 1989*, DOE/EIA-0219(89) (Washington, DC, November 1990) and Energy Information Administration, *International Energy Annual 1990*, DOE/EIA-0219(90) (Washington, DC, November 1991).

marketing operations (excluding mergers and acquisitions) more than doubled in 1990, to $3 billion.[46] These expenditures were directed towards upgrading refineries so that they could produce lighter products, process lower quality crude oil, and meet new environmental requirements.

Coal Production

Despite flat prices, the 5-percent increase in U.S. coal production in 1990[47] led to an improved financial performance for U.S. coal producers. For the 23 major petroleum companies reporting to EIA's Financial Reporting System, operating income from coal production (excluding the effects of asset writedowns and other unusual accounting items) was up slightly.[48] The FRS companies accounted for 27 percent of total U.S. coal production (bituminous coal and lignite) in 1990.[49] Income of publicly-traded corporations classified in the coal industry rose over 50 percent.[50] This improvement was largely due to the absence of work stoppages in 1990, which adversely affected this segment of the coal industry in 1989. The 1990 annual reports of the three foreign-affiliated corporations whose primary industry is coal production (Ashland Coal, Gulf Resources and Chemical, and Westmoreland Coal) showed that these affiliates had net income of $27 million in 1990 compared with net losses of $17 million in 1989.

Foreign affiliates' U.S. coal production in 1990 was 23 percent higher than their 1989 production, raising their share of total U.S. coal production from 21 percent to 25 percent in 1990 (Table 12 and Figure 4). Nearly all of the 47 million ton increase in the foreign affiliates' coal production was the result of Hanson PLC's acquisition of Peabody Holding Company. Excluding the effect of this transaction, foreign affiliates' U.S. coal production would have remained at 21 percent of the U.S. total.

Uranium Exploration and Development

U.S. uranium exploration and development expenditures contributed by foreign companies dropped by $3.6 million in 1990 from the 1989 level, or by 59 percent (Table 13). In contrast, expenditures provided by domestic companies rose from $8.7 million to $14.6 million. According to EIA's *Uranium Industry Annual 1990*, the drop in foreign spending can be "...attributed to companies increasingly lowering U.S. exploration expenses with revenues from their domestic subsidiaries' operations."[51] That is, cash flow generated by the domestic subsidiary has increasingly replaced funds obtained from the foreign parent company.

[46]Energy Information Administration, *Performance Profiles of Major Energy Producers 1990*, DOE/EIA-0206(90) (Washington, DC, December 1991), pp. 12-14.
[47]Energy Information Administration, *Coal Production 1990*, DOE/EIA-0118(90) (Washington, DC, September 1991), pp. 13 and 49.
[48]Energy Information Administration, *Performance Profiles of Major Energy Producers 1990*, DOE/EIA-0206(90) (Washington, DC, December 1991), p. 32.
[49]Energy Information Administration, *Performance Profiles of Major Energy Producers 1990*, DOE/EIA-0206(90) (Washington, DC, December 1991), p. 157.
[50]Standard and Poor's Compustat Services, Inc., Compustat II data base. See Chapter 4 for a description of the Compustat data base.
[51]Energy Information Administration, *Uranium Industry Annual 1990*, DOE/EIA-0478(90) (Washington, DC, September 1991), p. 12.

Table 12. Bituminous Coal and Lignite Production and Source of Ownership of Foreign-Affiliated Coal Companies in the United States, 1986-1990

Controlling Company/ Foreign-Ownership Interest	Coal Production[a]				
	1986	1987	1988	1989	1990
	(thousand short tons)				
Peabody Holding Co. (Hanson plc)[b]	NF	39,476	40,726	47,700	93,300
Consolidation Coal Co. (Du Pont) JES Holding, Inc	41,529	52,500	54,900	53,500	54,600
Shell Oil Co. Royal Dutch/Shell	8,738	15,445	24,360	25,500	24,600
Utah Minerals International, Inc. Broken Hill Proprietary Co.	12,651	12,996	13,360	15,200	15,300
Westmoreland Coal Co. Veba Kohle International	9,840	9,654	10,000	10,800	11,700
Ashland Coal Co. Saarbergwerke AG/Carborex	3,269	3,950	4,800	7,000	10,700
Pyro Mining Co. Costain Group	5,258	6,200	6,677	5,885	7,800
Cannelton Industries, Inc. Algoma Steel, Ltd.	3,411	4,054	4,054	4,536	5,393
Old Ben Coal Co. (BP America)[c] British Petroleum	15,220	13,254	12,986	12,200	5,000
M.A. Hanna Co. Brascan Ltd.	3,428	3,500	3,955	4,200	4,085
Andelex Resources, Inc. Andelex Resources, Inc.	2,602	2,500	3,275	3,900	4,000
Pickard Mather & Co. Steel Company of Canada	3,555	4,014	3,130	3,130	3,130
Agip Coal, Inc. Ente Nazionale Idrocarburi	0	0	2,652	3,119	3,101
Great Western Coal, Inc. Great Western Resources, Inc.	2,597	2,564	2,911	3,374	2,969
Santa Fe Pacific Coal Corp. Olympia and York, Ltd.	NF	NF	2,107	2,342	2,743
Inspiration Coal, Inc.[d] Hudson Bay Mining & Smelting Co.	2,859	2,785	2,579	1,993	2,500
Gulf Resources and Chemical HCI Holdings, Ltd./Private Investor	2,139	1,938	1,426	1,709	2,192
Carter-Roag Coal Co. Marquard and Bahls Coal Co.	267	387	588	540	604
Total American Mining Total Compagnie Francaise de Petroles	597	764	585	42	0
Tanoma Coal Co., N.V. Pohang Steel America, Inc.	560	506	NF	NF	NF
Avery Coal Co. Trafalgar Industries	267	275	283	283	0
Coal Corp. of American (Shaker Division) Campbell Resources	250	248	60	60	0

See footnotes at end of table.

Table 12. Bituminous Coal and Lignite Production and Source of Ownership of Foreign-Affiliated Coal Companies in the United States, 1986-1990 (Continued)

Controlling Company/ Foreign-Ownership Interest	Coal Production[a]				
	1986	1987	1988	1989	1990
	(thousand short tons)				
A.T. Massey Coal Co.[e]					
Royal Dutch/Shell Group	23,229	0	0	0	0
Enoxy Coal, Inc.[f]					
Ente Nazionale Idrocarburi	3,377	3,108	0	0	0
Canterra Coal[g]					
Polysar Energy & Chemical	526	853	0	0	0
Total Foreign Affiliated	146,169	180,971	195,414	207,013	253,717
Total United States	886,023	915,202	946,710	977,381	1,025,570
Percent Foreign Affiliated	16.5	19.8	20.6	21.2	24.7

[a]Coal production refers to lignite and bituminous coal production only.

[b]For 1987-1989, only Newmont Mining's ownership share of Peabody's production is shown, which was 49.97 percent in 1987-1988 and 54.97 percent in 1989. In 1990, Hanson Plc, a U.K. Company, gained 100-percent ownership of Peabody Holding Company.

[c]The estimate of 1990 production was derived as follows: Mingo Logan (2,200 thousand tons of production according to Ashland Coal) was sold in January and remaining coal operations were sold in July. So, estimated production = (12,200 - 2,200)/2 = 5,000 thousand tons.

[d]1990 production from Inspiration Resources Corporation, *1990 Annual Report*, p. 10.

[e]Joint Venture with Fluor Corporation. The joint venture was dissolved in 1987.

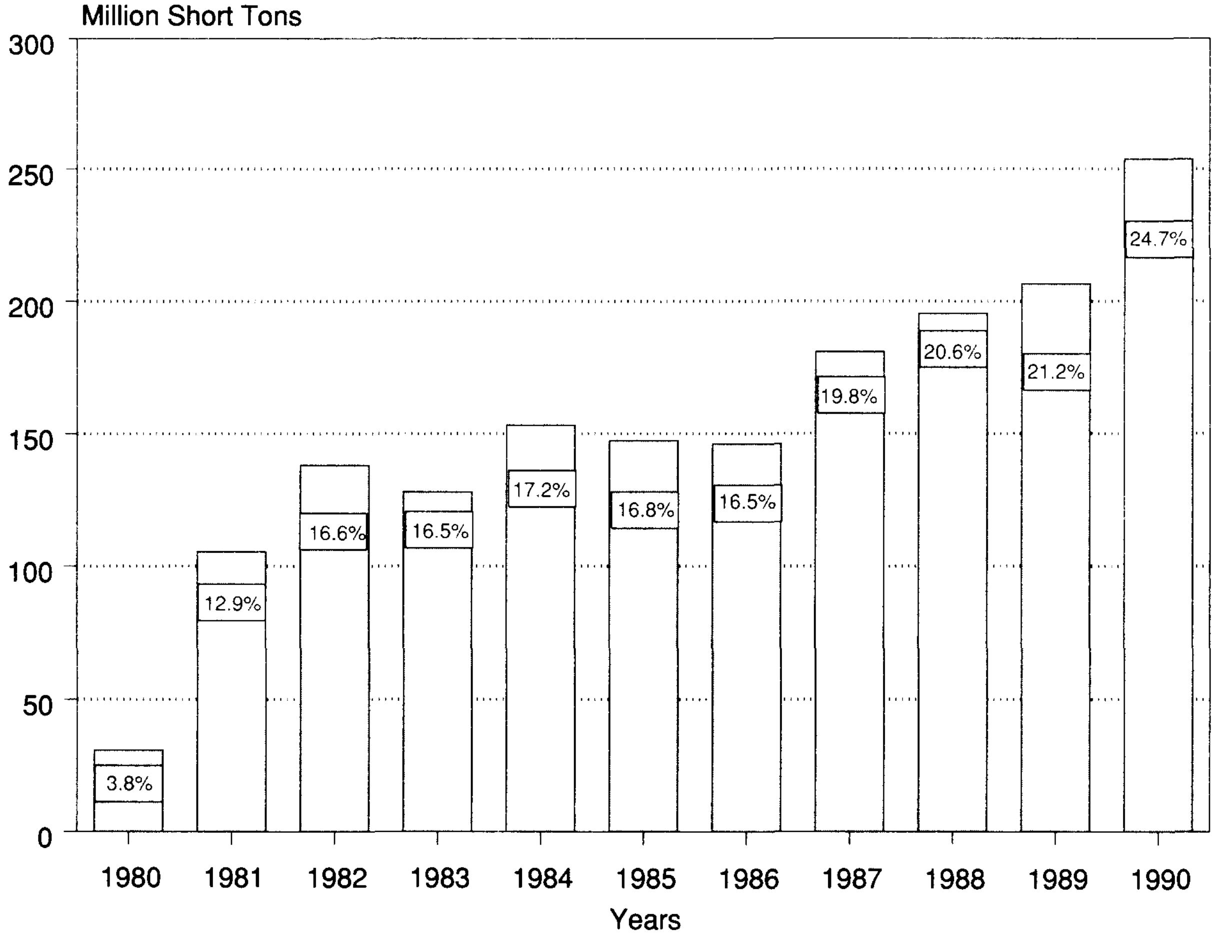
[f]Joint venture with Occidental Petroleum Corporation. The joint venture was dissolved in 1988.

[g]U.S. coal operations were sold in 1988.

NF = No foreign affiliation during this period.

Sources: Coal ownership: U.S. Securities and Exchange Commission Form 13-D; *Moody's Industrial Manual, 1987-91*; U.S. Department of Commerce, International Trade Administration, *Foreign Direct Investment Activity in the United States*. Coal company production data: 1990: *1992 Coal Mine Directory* (Chicago, IL: Maclean Hunter Publishing Co., October 1991). 1989: *Keystone News Bulletin* (Stamford, CT: Maclean Hunter Publishing Co., June 1990). 1988: *Keystone News Bulletin* (Stamford, CT: Maclean Hunter Publishing Co., July 1989). 1987: *Keystone News Bulletin* (Stamford, CT: Maclean Hunter Publishing Co., May 27, 1988). 1986: *1987 Keystone Coal Industry Manual* (New York: McGraw-Hill Inc., 1987). U.S. total for coal production: Energy Information Administration, *Coal Production 1990*, DOE/EIA-0118(90) (Washington, DC, September 1991).

Figure 4. Production and Share of U.S. Total Bituminous Coal and Lignite for Foreign-Affiliated U.S. Companies, 1980-1990



Sources: 1980: U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(84) (Washington, DC, September 1984), Appendix A. 1981: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1983*, DOE/EIA-0466 (Washington, DC, February 1985). 1982-1989: *Keystone Coal Industry Manual*, 1983-1990 Editions. 1990: *1992 Coal Mine Directory,* (Chicago, IL: Maclean Hunter Publishing Co., October 1991). U.S. Totals: Energy Information Administration, *Coal Production 1990*, DOE/EIA-0118(90) (Washington, DC, September 1991).

Table 13. Foreign Participation in U.S. Uranium Exploration and Development, 1976-1990

Year	Exploration and Development Expenditures by Foreign Companies	Total U.S. Exploration and Development Expenditures	Foreign Expenditures as a Percent of U.S. Total	Number of Foreign-Affiliated Companies
	(million dollars)			
1976	13.2	170.7	8	15
1977	21.7	258.1	8	17
1978	39.3	314.3	13	31
1979	34.1	315.9	11	28
1980	37.6	267.0	14	28
1981	24.6	144.8	17	25
1982	14.6	73.6	20	14
1983	4.8	36.9	13	9
1984	6.6	26.5	25	9
1985	5.6	20.1	28	6
1986	12.0	22.1	55	8
1987	11.9	19.7	60	11
1988	8.9	20.1	44	11
1989	6.1	14.8	42	7
1990	2.5	17.1	15	9

Source: Energy Information Administration, *Uranium Industry Annual 1990*, DOE/EIA-0478(90) (Washington, DC, September 1991), pp. 11, 12.

4. Financial Profiles and Transactions of Foreign-Affiliated U.S. Energy Companies

As stated in Chapter 2 of this report, the measures of FDI and associated income published by the U.S. Department of Commerce are designed to conform with the international transactions accounts. However, these measures are not designed to gauge the performance of foreign-affiliated U.S. companies from a financial reporting perspective. In order to provide a financial reporting perspective, comparisons of corporate indicators between foreign-affiliated U.S. energy companies and other U.S. energy companies are presented in the following sections.[52]

Profit and Investment Trends

Iraq's August 4, 1990, invasion of Kuwait dominated world oil market events in 1990. The invasion initially resulted in a sharp rise in oil prices. By October of 1990, oil prices rose to $33 per barrel, $17 above their July 1990 level.[53] Throughout the remainder of the year, however, oil prices fell as Operation Desert Shield unfolded and it became evident that embargoed Iraqi and Kuwaiti oil exports would be fully replaced by additional production among other oil exporting nations.

The performance of oil markets during the latter half of 1990 marked a sharp contrast to the preceding half of the year when crude oil prices moved markedly lower from their 1989 levels. Still, the sharp increase in oil prices subsequent to the Iraqi invasion more than offset earlier and later price declines. For the year, oil prices averaged more than $4 dollars per barrel higher than in 1989. The overall rise in oil prices had a decidedly positive effect on upstream earnings. The major petroleum companies' oil and gas operations and independent oil and gas producers both registered income increases in excess of 50 percent between 1989 and 1990.[54] However, oil and gas producers experienced generally low rates of return during most of the 1980's. Consequently, despite their steep rise in income, the profitability of oil and gas producers was little different from the average for the rest of U.S. industry in 1990.

The events of 1990 had a mixed effect on the financial performance of refining and marketing operations. Refining and marketing operations during the first half of 1990 benefitted from unusually strong refining margins, as petroleum product prices held relatively steady in the face of declining crude oil prices. However, during the latter half of 1990, refining and marketing earnings were influenced most by the Iraq invasion of Kuwait. During this period refined product prices generally followed the prevailing swings in crude oil prices, but with a lag. On balance, U.S. downstream earnings of 6 of 11 major petroleum companies declined between 1989 and 1990 as did the net income of 4 of 8 independent refiners, but the major's foreign refining operations realized a 41-percent gain for the year.[55]

For the publicly traded energy companies included in this chapter, net income rose by 8 percent in 1990 (Table 14). Since the 1986 crude oil price collapse, energy company profitability remained well below that

[52]The financial information represented in this section was drawn from the consolidated financial statements contained in Standard and Poor's Compustat II Industrial File. The U.S. energy industry comparison group is composed of companies other than the foreign-affiliated companies on the Compustat file that are classified under the four-digit Standard Industrial classification (SIC) industry categories of crude oil and natural gas production (1311), petroleum refining (2911), oil field services (1381, 1382, and 1389), and bituminous coal and lignite production (1220 and 1221), excluding companies that have been identified as foreign-affiliated, or companies whose operations are foreign-based or companies whose operations are already included in U.S. companies that have been identified as foreign-affiliated.

[53]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-005(91/12) (Washington, DC, December 1991), Table 9.1.

[54]Energy Information Administration, *U.S. Energy Industry Financial Developments, 1990 Fourth Quarter*, DOE/EIA-0543(90/4Q) (Washington, DC, March 1991), Tables 2 and 3.

[55]Energy Information Administration, *U.S. Energy Industry Financial Developments, 1990 Fourth Quarter*, DOE/EIA-0543(90/4Q) (Washington, DC, March 1991), Tables 2 and 3.

Table 14. Annual Change in Net Income and Return on Stockholders' Equity, 1988-1990
(Percent)

Industries	Percent Change in Net Income			Return on Stockholders' Equity[a]		
	1988	1989	1990	1988	1989	1990
U.S. Energy Companies[b]	100.3	-10.4	7.5	12.8	11.3	11.7
All U.S. Manufacturing Corporations	[c]33.7	[c]11.8	[c,d]-9.7	16.1	13.6	[d]11.9

[a]Net income as a percent of year-end stockholders' equity.
[b]Includes both groups of companies shown in Table 15.
[c]Percent change in corporate profits after income taxes.
[d]1990 figure is the annual average through the third quarter.
Sources: Energy companies: Compustat II Industrial File. Corporate profits after income taxes for all U.S. manufacturing corporations and return on stockholders' equity for all U.S. manufacturing corporations: *Economic Report of the President February 1991*, p. 390.

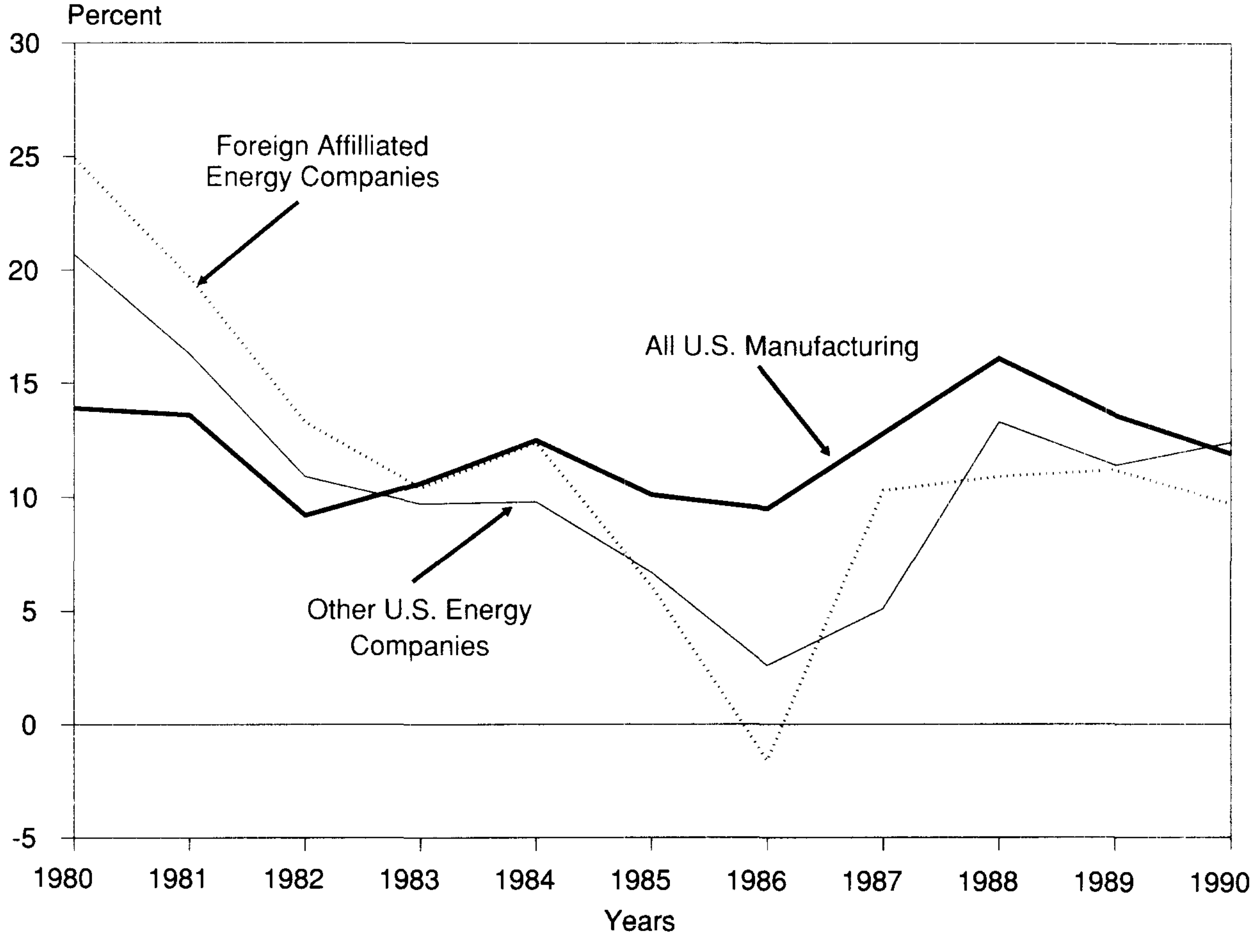
of the rest of U.S. industry until 1990. However, 1990's higher oil prices lifted energy company earnings at the same time that U.S. manufacturing corporations were experiencing reduced profits as a result of the recession. As a result, there was little difference between the profitability of energy companies and the rest of U.S. industry in 1990 (Figure 5).

The financial performance of foreign-affiliates and other U.S. energy companies appeared to differ in 1990. For the former group, net income fell 10 percent between 1989 and 1990, while net income rose 13 percent for the latter group (Table 15).[56] As a result, the U.S. energy companies reported a 12-percent return on equity in 1990, slightly higher than the 10-percent return reported by foreign-affiliated companies. However, the decline in net income for foreign affiliates was traceable primarily to the financial results of three of the largest foreign-affiliated U.S. energy companies: Shell Oil, Du Pont, and Panhandle Eastern. These companies' declines in net income were in part due to special charges taken against earnings in 1990 and due to a general decline in chemical industry earnings relative to 1989.[57] Shell Oil stated that their refining and marketing "...earnings decline resulted primarily from substantially higher environmental costs, increased refinery maintenance and scheduled shutdown costs, and lower refined product sales volumes..." and that "...commodity chemical earnings declined...due to lower margins chiefly from increased raw material costs."[58] Du Pont's decline in income from chemicals and other nonenergy businesses more than offset a doubling of their petroleum earnings,[59] while Panhandle Eastern's decline in net income was due to their writedown of the value of their liquified natural gas facilities' assets and the adverse financial effects of discontinued operations.[60] Net income of these companies totaled $3.9 billion in 1989 and $3.1 billion in 1990. Excluding these three companies, foreign affiliates' net income increased 25 percent between 1989 and 1990.

In measuring corporate financial performance, cash flow from operations is viewed as both an alternative measure to net income and a complementary one. Cash flow for foreign-affiliated U.S. energy companies rose less than 1 percent between 1989 and 1990. Most of this lackluster cash flow performance was largely attributable to the financial performance of Panhandle Eastern, whose cash flow from operations dropped from $0.7 billion in 1989 to $0.0 billion in 1990. According to Panhandle Eastern, the decrease in cash flow was caused primarily by 1990 payments for rate refunds, contract settlements, and income tax obligations of an acquired company.[61] Excluding

[56]BP America discontinued publication of their consolidated financial statements beginning with the 1989 reporting year. Consequently, their financial results are not included in Tables 14 and 15.
[57]Chemical Manufacturers Association, *U.S. Chemical Industry Statistical Handbook 1991* (Washington, DC, September 1991), Table 2.7.
[58]Shell Oil Company, *1990 Annual Report*, pp. 27-28.
[59]Du Pont, *Annual Report 1990*, p. 42.
[60]Panhandle Eastern Corporation *1990 Annual Report*, p. 22.
[61]Panhandle Eastern Corporation *1990 Annual Report*, p. 19.

Figure 5. Return on Equity for Foreign-Affiliated U.S. Energy Companies, Other U.S. Energy Companies, and All U.S. Manufacturing Corporations, 1980-1990



Sources: Energy companies: Compustat II Industrial File and company annual reports. All U.S. manufacturing corporations: *Economic Report of the President*, February 1991.

Panhandle Eastern, the foreign affiliates' cash flow from operations rose 7 percent which was still noticeably less than the 15-percent rise for other energy companies.

In 1990, higher oil prices encouraged increased capital outlays for oil and gas production. The number of wells completed in the United States, after declining for 5 consecutive years, rose by 6 percent in 1990, while the rotary rig count rose by 16 percent.[62] Also, although chemical earnings dropped in 1990, major petroleum companies' expenditures for chemical projects initiated in prior, more profitable, years continued into 1990. Foreign-affiliated U.S. energy companies registered a 10-percent increase in capital expenditures between 1989 and 1990. Nearly three quarters of these companies reported an increase in capital expenditures.

Foreign Direct Investment Transactions in U.S. Energy Markets

Review of the composition of FDI-related transactions is useful for discerning trends and changes in the investment targets of foreign investors and the nature of the interest gained by foreign investors. This section

[62]Energy Information Administration, *Monthly Energy Review*, December 1991, DOE/EIA-005(91/12) (Washington, DC, December 1991), Tables 5.1 and 5.2.

Table 15. Selected Financial Information for Foreign-Affiliated U.S. Energy Companies, 1989-1990

Category	Foreign-Affiliated U.S. Energy Companies[a]			U.S. Energy Industry Comparison Group[b]		
	1989	1990	Percent Change	1989	1990	Percent Change
	(billion dollars)			(billion dollars)		
Financial Items						
Revenues	82.0	93.5	14.0	361.9	431.0	19.1
Net Income	5.1	4.6	-9.8	15.8	17.9	13.3
Cash Flow[c]	11.6	11.7	0.9	40.3	46.3	14.9
Capital Outlays	10.5	11.6	10.5	39.8	40.9	2.8
Total Assets	97.4	104.1	6.9	378.1	399.1	5.6
			(percent)			
Financial Ratios						
Return on Equity[d]	11.2	9.7		11.4	12.4	
Dividends/Net Income	50.2	57.3		83.1	64.7	
Dividends/Cash Flow	22.2	22.7		32.7	25.0	
Debt/Equity[e]	32.8	32.7		59.1	56.3	

[a]Includes incorporated U.S. energy companies which are foreign-affiliated and for which publicly reported financial information is available. Also included are foreign parent companies for which data for U.S. operations were not separately disclosed. For 1989, these companies were: Adobe Resources Corp., American Petrofina, Anadarko Petroleum Corp., Arabian Shield Development Co., Ashland Coal Inc., Avalon Corp., Barret Resources Corp., Bellwether Exploration Co., Caspen Oil Inc., Castle Energy Corp., Chieftain International Inc., Coda Energy Inc., Coho Resources Inc., Daleco Resources Corp., DI Industries Inc., DRX Inc., E.I. du Pont de Nemours and Company, Exploration Co., Exploration Company of Louisiana, Georesources Inc., Gold King Consolidated Inc., Great Northern Gas Co., Gulf Resources and Chemical Co., Hamilton Oil Corp., Harcor Energy Co., Harken Energy Corp., Hondo Oil and Gas Co., Horsham Corp., Inspiration Resources Corp., M.A. Hanna Co., MSR Exploration Ltd., New London Inc., Newmont Mining Corp., Norcen Energy Resources Ltd., Oceanic Exploration Co., Panhandle Eastern Corp., Penn Virginia Corp., Placer Dome Inc., Premier Resources Ltd., Presidio Oil Co., Ranger Oil Ltd., Rio Algom Ltd., Santa Fe Energy Resources Inc., Schlumberger Ltd., Shell Oil Co., Sunshine Mining Co., Sunlite Inc., Taurus Petroleum Inc., Tesoro Petroleum Corp., Total Petroleum (North America), Trinity Resources Ltd., Triton Energy Corp., Unimar Co., Westmoreland Coal Co., and Woodbine Petroleum Inc. In 1990, Reading & Bates Corp. was included. In 1990, the following companies were not included: DI Industries (no longer foreign-affilitated) and Premier Resources (acquired). All data for the companies were derived from the Compustat II Industrial File.

[b]The comparison group is derived from aggregates available from the Compustat II Industrial File for the following four digit (SIC) industries: 1220 (bituminous coal, lignite mining), 1221 (bituminous coal, lignite surface mining), 1311 (crude petroleum and natural gas production), 1381 (oil and gas well drilling), 1382 (oil and gas field exploration), 1389 (oil and gas field services not elsewhere classified), and 2911 (petroleum refining). The Compustat aggregates are adjusted by subtracting out data for companies which have been identified as foreign-affiliated, or whose operations are foreign-based, or foreign-based companies whose U.S. operations are already included in U.S. companies identified as foreign-affiliated.

[c]Measured as cash flow from operations.

[d]Defined as net income divided by year-end stockholder's equity.

[e]Defined as year-end long-term debt divided by year-end stockholders' equity.

Source: Compiled from Compustat II Industrial File and company annual reports.

presents a summary of equity acquisitions, mergers, joint ventures, lease acquisitions, and other transactions related to FDI activity in 1990. The transactions identified in this section were taken from the most accurate information that is publicly available and should describe broad trends and developments in the composition of FDI in U.S. energy.[63] However, these transactions data do not necessarily reflect the confidential direct investment data submitted by foreign affiliates to the U.S. Department of Commerce.

Based on the information contained in the Appendix and the Appendix to the 1989 edition of this report, the values of the identified FDI-related transactions were classified by industry and type of transaction. Petroleum continued to dominate foreign investors' interest in U.S. energy in 1990. However, the share of the value of transactions related to petroleum fell from 81 percent in 1989 to 58 percent in 1990 (Table 16). This shift primarily reflected an increase in foreign direct investment in the U.S. coal industry as a result of the $1,223 million acquisition of Peabody Holding Company by the British company, Hanson PLC.

The value of petroleum-related transactions rose from $1.6 billion in 1989 to $1.9 billion in 1990. Four upstream acquisitions had values in excess of $100 million: 1) Arethusa (Offshore) Ltd., of Bermuda, bought Zapata Corporation's 12-rig offshore drilling fleet and related assets for $298 million, 2) Mosvold Shipping, of Norway, purchased Bechtel Group's Dual Drilling Company for $170 million, 3) Bridge Oil (USA), a subsidiary of the Australian company Bridge Oil Ltd. paid $159 million for a package of oil and gas properties from Texas Oil and Gas Corporation, 4) Norcen Energy Resources, of Canada, acquired Skelgas Group, a propane marketer, for $157 million. Other major foreign upstream U.S. property acquisitions

Table 16. Distribution of the Value of Foreign Direct Investment Transactions[a] by Industry, 1981-1990
(Percent)

Industry	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Petroleum	79.6	60.3	87.8	77.2	99.1	91.5	81.3	98.4	81.0	58.1
Coal	20.2	32.4	11.3	19.7	0.9	7.6	18.7	1.1	19.0	41.9
Other	0.2	7.3	1.0	3.1	0.0	0.9	0.0	0.5	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Excludes transactions for which dollar values were not reported.
Note: Totals may not equal sum of components due to independent rounding.
Source: 1990: The percent distribution is based on Tables A1 and A2 in the Appendix. 1981-1989: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1989*, DOE/EIA-0466(89) (Washington, DC, December 1990).

[63]Information in this section includes the identified FDI-related transactions for 1990 which are listed in Tables A1 and A2 in the Appendix of this report, as are the information sources. Information for 1981 and 1982 FDI-related transactions is drawn form Appendix A of the U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(83) (Washington, DC, September 1983), and Appendix A of U.S. Department of Energy, *Annual Report to Congress*, DOE/S-0010(84) (Washington, DC, September 1984), respectively. The 1983 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1983*, DOE/EIA-0466 (Washington, DC, February 1985), the 1984 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1984*, DOE/EIA-0466 (Washington, DC, December 1985), 1985 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1985*, DOE/EIA-0466(85) (Washington, DC, December 1986), 1986 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1986*, DOE/EIA-0466(86) (Washington, DC, December 1987). 1987 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1987*, DOE/EIA-0466(87) (Washington, DC, December 1988) and 1988 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1988*, DOE/EIA-0466(88) (Washington, DC, December 1989) and 1989 information appeared in Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1989*, DOE/EIA-0466(89) (Washington, DC, December 1990). It should be noted that because information utilized in this section can only come from public sources, validation is not always possible. Nevertheless, the information presented in this section is useful for discerning broad trends in the composition of FDI-related transactions.

involved the following: Santa Fe Pacific Corp (which is partly owned by Olympia and York Developments, Ltd., of Canada) along with Prudential Insurance Co, acquired a $55 million California property interest from Mission Resources Partners; The Exploration Co. of Louisiana's $40 million purchase of south Texas gas reserves; and, Conoco Inc.'s $39 million purchase of South Texas gas wells from Forest Oil Corp.

There were two notable downstream acquisitions by foreign companies in 1990: 1) Star Enterprise (a Texaco and Aramco, of Saudi Arabia, joint venture), paid $83 million to purchase 128 Florida retail gasoline outlets, 2) Ultramar, of the United Kingdom, completed the acquisition of 62 service stations from Conoco at a cost of $44 million. In 1990, the only notable foreign equity investment in U.S. downstream petroleum occurred with the Petroleos de Venezuela, S.A. purchase of the remaining 50-percent interest in Citgo Petroleum Corporation for $675 million from the Southland Corporation. The only other sizable downstream investment by foreign companies in U.S. petroleum consisted of Aramco's $50 million expenditure to upgrade and expand Star Enterprise's Port Arthur refinery.

The value of FDI-related transactions in U.S. coal operations totaled $1,414 million in 1990 compared with $381 million in 1989. In 1990, foreign direct investment in U.S. coal operations consisted primarily of Hanson PLC's $1,223 million acquisition of Peabody Holding Company. The other sizable coal-related acquisition consisted of Ashland Coal Co.'s $144 million purchase of BP America's subsidiary, Mingo Logan Coal Co. Acquisitions of U.S. coal properties by foreign investors consisted largely of Idemitsu Kosan Co. Ltd's $40 million payment for a 100-percent ownership in an Arkansas coal operation.

The two largest FDI-related transactions in U.S. energy in 1990, Hanson-Peabody and PDVSA-Citgo, were equity acquisitions. The large share of FDI-related transactions values in 1990 attributable to equity acquisitions reflect these two deals (Table 17).

Table 17. Distribution of the Value of Foreign Direct Investment Transactions[a] by Type of Transaction, 1981-1990
(Percent)

Type of Transaction[b]	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Stock/Equity Acquisition ..	74.1	58.2	16.9	61.5	49.1	57.6	91.8	51.8	53.2	81.5
Property or Lease Acquisition	16.7	10.6	55.7	31.6	29.2	24.2	4.4	19.8	4.9	12.3
Joint Venture	9.2	10.2	4.1	0.9	0.3	16.3	1.9	17.1	28.9	0.0
Other	(c)	21.0	23.4	6.0	21.4	1.9	1.9	11.3	12.9	6.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Excludes transactions for which dollar values were not reported.
[b]Stock/equity acquisitions include purchases of common stock and purchases of subsidiary companies of U.S. corporations. Property or lease acquisitions include purchase of producing energy properties and acquisitions of leases from Federal and State governments. Joint ventures include the value of a foreign entity's share in a joint venture in the United States. Other transactions largely consist of plant expansions, long-term supply contracts, and purchase of existing plant and equipment.
[c]Less than 0.05 percent.
Note: Totals may not equal sum of components due to independent rounding.
Source: 1990: the percent distribution is based on Tables A1 and A2 in the Appendix. 1981-1989: Energy Information Administration, *Profiles of Foreign Direct Investment in U.S. Energy 1989*, DOE/EIA-0466(89) (Washington, DC, December 1990).

Appendix

Completed Foreign Direct Investment Transactions, 1990

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1990 Through December 1990

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Petroleos de Venezuela, S.A. (Venezuela)	National oil company	Citgo Petroleum Corp.	Petroleum refining, marketing	Equity acquisition	675	January 90
Arethusa (Offshore) Ltd. (Bermuda)	NA	Zapata Corp. (TX)	Marine services, oil and gas exploration	Equity acquisition	298	October 90
Mosvold Shipping A.S. (Norway)	Shipping Co., Diversified investment	Dual Drilling Co.	Offshore drilling	Equity acquisition	170	July 90
Bridge Oil Ltd. (Australia) Bridge Oil (USA) Inc.	Oil and gas exploration and development	Texas Oil and Gas Corp. (TX)	Oil and gas exploration and production	Property acquisition	159.3	Fourth Quarter 90
Norcen Energy Resources, Ltd. (Canada)	Oil and gas exploration and development, propane marketing, iron ore mining	Skelgas Group Inc.	Propane marketer	Equity acquisition	156.7	August 90
ARAMCO (Saudi Arabia)	National Oil Company	TOC Retail	Petroleum marketing/C-Store operations	Asset acquisition	82.5	October 90
Olympia and York Ltd. (Canada) Santa Fe Energy Resources	Oil and gas exploration and development	Mission Resource Partners, L.P	Oil and gas exploration and production	Property acquisition	55.0	December 90
ARAMCO (Saudi Arabia)	National Oil Company	Star Enterprise (TX)	Petroleum, refining, marketing	Refinery upgrade	50.0	September 90
Ultramar Plc (United Kingdom)	Integrated Petroleum Company	Conoco, Inc. (DE)	Integrated petroleum operations	Asset acquisition	44.0	July 90
Louis Dreyfus et Cie (France) Louis Dreyfus Corp.	NA	Bogart Oil Co. (OK)	Oil and gas exploration and production	Equity acquisition	43.9	July 90
Bank of Scotland (United Kingdom) Exploration Co. of Louisiana	Oil and gas exploration and development	None	None	Equity acquisition	40.0	July 90
JES Company Ltd. (Canada) Conoco	Integrated petroleum operations	Forest Oil Corp. (TX)	Oil and gas exploration and production	Property acquisition	39.0	December 90

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1990 Through December 1990 (Continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
British Petroleum PLC (United Kingdom)	Integrated petroleum operations	None	None	Property acquisition	15.1	March 90
Bank of Scotland (United Kingdom) Exploration Co. of Louisiana	Oil and gas exploration and development	Sunrise Energy Corp/PetroGen Petroleum Inc.	Gas marketing and transport	Equity acquisition	15.0	June 90
Japan Exploration Co. Ltd. (Japan) Japex Gulf of Mexico Exploration, Inc.	Oil and gas exploration and development	Amoco Oil Co. (IL)	Integrated petroleum operations	Joint drilling	15.0	December 90
Industrial Equity Ltd. (Hong Kong)	Diversified investment holdings	Triton Energy Corp. (TX)	Oil and gas exploration and production	Equity acquisition	13.4	June 90
Electrofina of Belgium (Belgium) Rockland Pipeline Co.	Natural gas gathering, transmission	Rockland Pipeline System	Natural gas gathering, transmission	Asset acquisition	12.0	February 90
MSR Exploration (Canada)	Oil and gas exploration and development	Omni Petroleum	Oil and gas exploration and production	Property acquisition	9.3	February 90
New London PLC (United Kingdom) New London Resources Inc.	Oil and gas exploration and development	Elders Resources (N.A.) Inc.	Oil and gas exploration and production	Property acquisition	9.0	December 90
Keppel Group (Singapore) Lasmo Energy, Inc.	Investment holdings, shipbuilding	Allison-McDermitt, Inc.	Rig servicing	Equity acquisition	6.0	September 90
Agip S.A. (Italy)	Integrated petroleum operations	None	None	Property acquisition	5.5	March 90
International Petroleum Investment Partnership, Ltd. (United Kingdom) Andarko Petroleum Crop.	Oil and gas exploration and development	Panhandle Eastern Corp. (TX)	Natural gas transmission	Property acquisition	5.0	August 90
MSR Exploration Ltd. (Canada)	Oil and gas exploration and development	Houston Petroleum Co. (TX)	Oil and gas exploration and production	Equity acquisition	4.8	December 90
International Eurotec Co. Ltd. (United Kingdom) Woodbine Petroleum Corp.	Oil and gas exploration and development	Nycal Corp. (DC)	Diversified holdings	Property acquisition	4.0	October 90

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1990 Through December 1990 (Continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Trinity Resources Ltd. (Canada)	Oil and gas exploration and development	Undisclosed	Undisclosed	Property acquisition	3.8	December 90
JES Company Ltd. (Canada) Conoco Inc.	Integrated petroleum operations	Remington Resources	Oil and gas exploration and production	Property acquisition	3.6	April 90
International Petroleum Investment Partnership Ltd. (United Kingdom) Anadarko Petroleum	Oil and gas exploration and development	Global Natural Resources, Inc. (TX)	Oil and gas exploration and production	Property acquisition	2.4	April 90
Metallgesellschaft AG (Germany) Castle Energy Co.	Oil and gas exploration and development, refining	TRW, Inc. (OH)	Automotive parts manufacturing, various systems	Property acquisition	2.4	September 90
Western Exploration Pty. Ltd. (Australia) Exploration Company	Oil and gas exploration and development	Spectrum Resources, Inc.	oil and gas exploration and production	Property acquisition	1.8	August 90
Cornwall Petroleum Corp. (Australia) HarCor Energy Inc.	Oil and gas exploration and development	Undisclosed	Undisclosed	Property acquisition	0.7	December 90
IBM U.K. Pension Trust (United Kingdom) Bellwether Exploration Co.	Oil and gas exploration and development	Borden Inc. (NY)	Food, Nonfood segment, industrial manufacturing	Property acquisition	0.3	March 90
Cornwall Petroleum Corp. (Australia) HarCor Energy Inc.	Oil and gas exploration and development	Undisclosed	Undisclosed	Property acquisition	0.3	November 90
Roxana Resources Ltd. (Canada)	NA	Undisclosed	Undisclosed	Property acquisition	0.3	December 90
Bridge Oil Ltd. (Australia) Bridge Oil (USA) Inc.	Oil and gas exploration and development	Peak Production	NA	Property acquisition	0.3	Fourth Quarter 90
Petroleos de Venezuela (Venezuela) Citgo Petroleum Corp.	Petroleum refining, marketing	Seaview Oil Co. (NJ)	Petroleum refining	Equity acquisition	NA	December 90
Metallgesellschaft AG (Germany) Metallgesellschaft Corp.	Diversified holdings, trading	Bishop Pipeline Corp. (TX)	Natural gas marketing, transport	Equity acquisition	NA	November 90

Table A1. Completed Transactions by Size in the Petroleum Industry from January 1990 Through December 1990 (Continued)

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Olympia and York Development, Ltd. (Canada)	Investment holdings	Sante Fe Energy Resources, Inc. (TX)	Oil and gas exploration and production	Equity acquisition	NA	December 90
Electrofina S.A. (Belgium) American Cometra	Oil and gas exploration and development	None	None	Property acquisition	NA	February 90
Aran Energy Plc (United Kingdom) Aran Energy Corp.	Oil and gas exploration and development	Denny Offshore Exploration	Oil and gas exploration and production	Property acquisition	NA	December 90
British Petroleum Plc (United Kingdom) TEX/CON Oil & Gas Co.	Onshore oil and natural gas exploration, marketing	Direct Gas Supply Corp. (NY)	Natural gas marketer	Equity acquisition	NA	May 90
British Petroleum Plc (United Kingdom) TEX/CON Oil & Gas Co.	Onshore oil and natural gas exploration, marketing	Geodominion Petroleum (NY)	Oil and gas exploration and production	Property acquisition	NA	June 90

Source: See page 40.

Table A2. Completed Transactions by Size in the Coal Industry from January 1989 Through December 1989

Acquiring Company	Acquiring Company Activity	Affected Company	Affected Company Activity	Type of Transaction	Size of Transaction	Date of Transaction
					(million dollars)	
Hanson PLC (United Kingdom) HM Holdings Inc.	Diversified holdings	Peabody Holding Co.	Coal mining	Equity acquisition	1,223	June 90
Saarberg Coal International (Germany) Ashland Coal Inc.	Coal mining	Mingo Logan Coal Co.	Coal mining	Equity acquisition	144	February 90
Idemitsu Kosan Co. Ltd. (Japan)	Petroleum refining and transport, mining	NA	NA	Property acquisition	40	May 90
Unidentified Foreign Investors	NA	NA	NA	Property acquisition	7.0	January 90

Source: See page 40.

Sources

Source material used in compiling Tables A1 and A2 includes:

- *The Wall Street Journal*, various issues, 1990 and 1991.
- *Business Week*, various issues.
- Company financial reports: annual reports to stockholders, annual reports on Securities and Exchange Commission (SEC) Form 10-K, and filings on SEC Schedule 13-D.
- *Moody's International Manual*, 1990 and 1991. Moody's Investors Service, New York, NY.
- *Oil and Gas Journal*, various issues, 1990 and 1991. Pennwell Publishing Company, Tulsa, OK.
- *SEC News Digest*, selected issues, 1990 and 1991. U.S. Securities and Exchange Commission, Washington, DC.
- *Mergers and Corporate Policy: The Cambridge Report on Corporate Policy*, 1990 and 1991. Cambridge Corporation, Ipswich, MA.
- *Oil and Gas Investor*, September 1990, and April 1991. Hart Publications, Inc., Denver, CO.
- *U.S. Oil Week*, various issues, 1990 and 1991. Capital Publishing Group, Alexandria, VA.
- *Keystone News Bulletin*, various issues, 1990 and 1991. Mining Information Services, a unit of Maclean Hunter Publishing Co., Stamford, CT.
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